

# CELLARCOOL

***WM & FD* SERIES**  
**TECH MANUAL**

***We manufacture, test and certify 100% of our wine cooling units in the USA. By sourcing the best components and closely controlling our manufacturing processes, we can assure the highest-quality, lowest defect manufacturing rates in the industry.***

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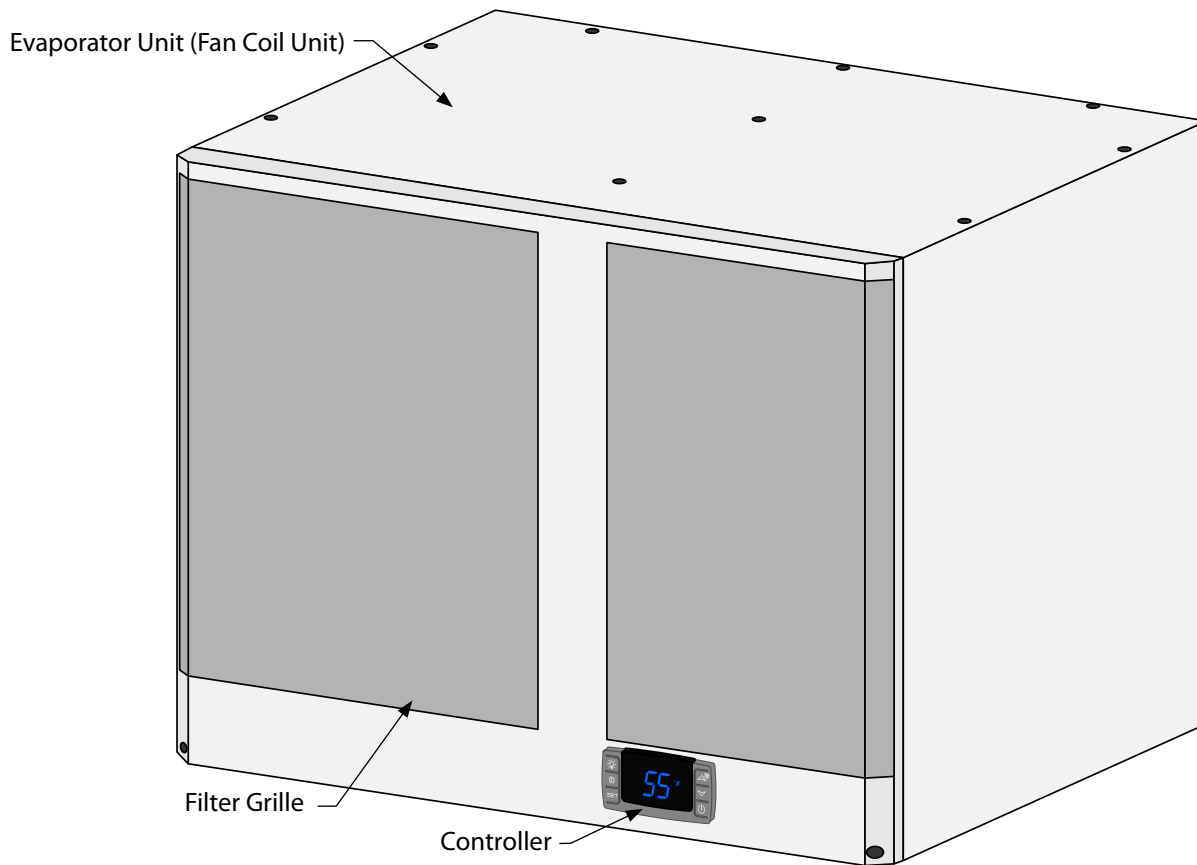
Mention of third-party products is for informational purposes only and constitutes neither an endorsement nor a recommendation. CellarCool assumes no liability with regard to the performance or use of these products.

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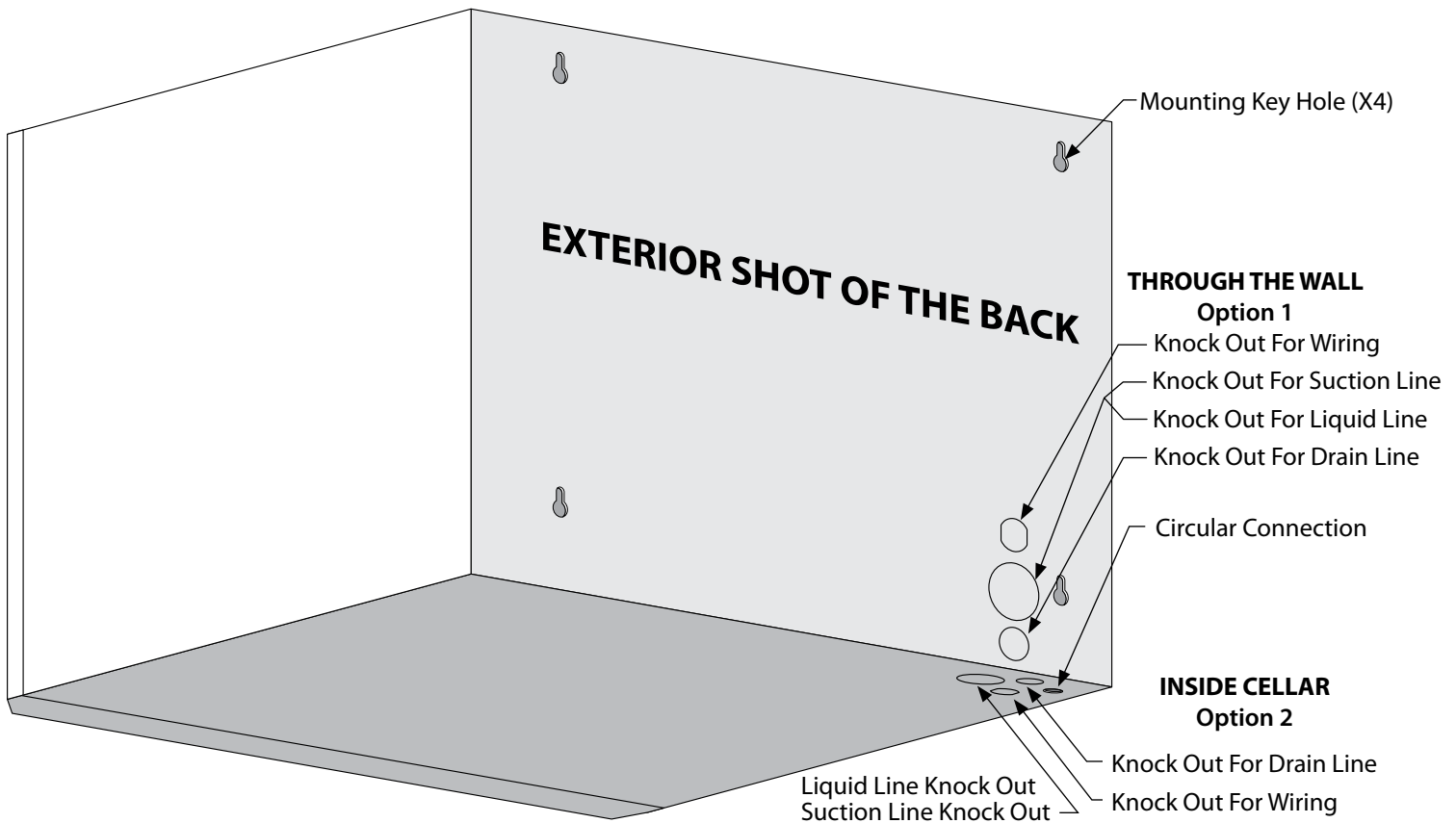
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# QUICK REFERENCE GUIDE

## WM Evaporator Unit (Fan Coil Unit) Front / Side View



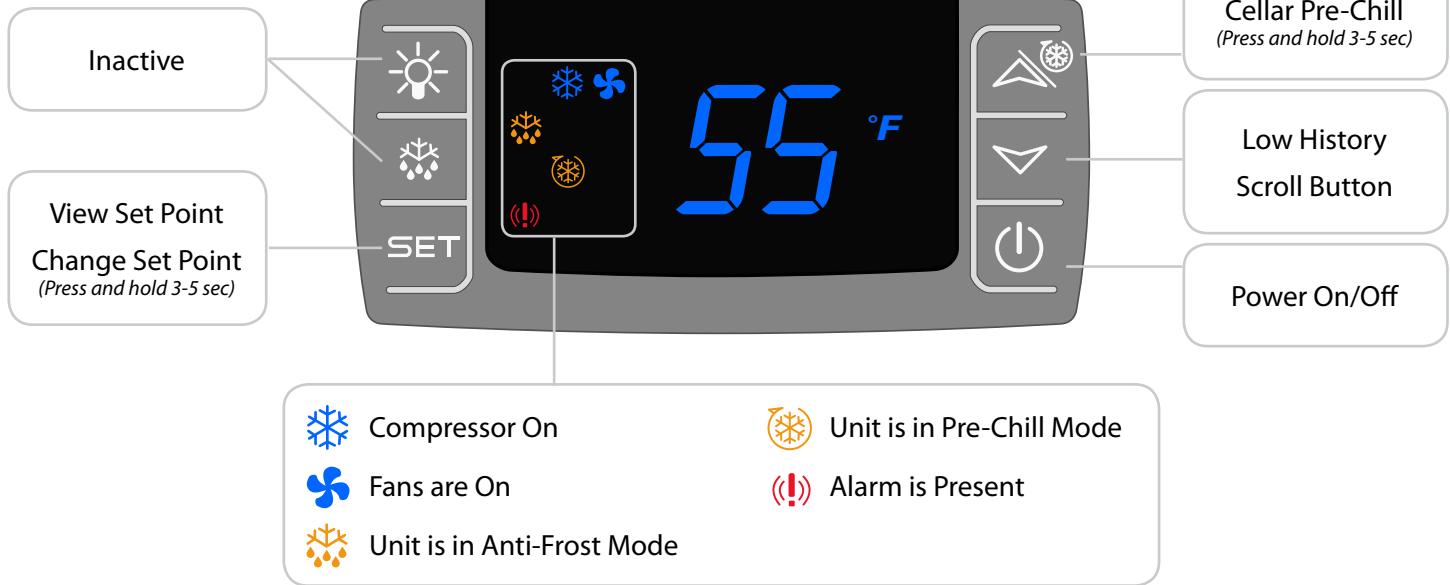
## WM Evaporator Unit (Fan Coil Unit) Rear / Side View



# QUICK REFERENCE GUIDE

## Controller Layout

Refer to page 36 for complete listing of buttons and symbols.

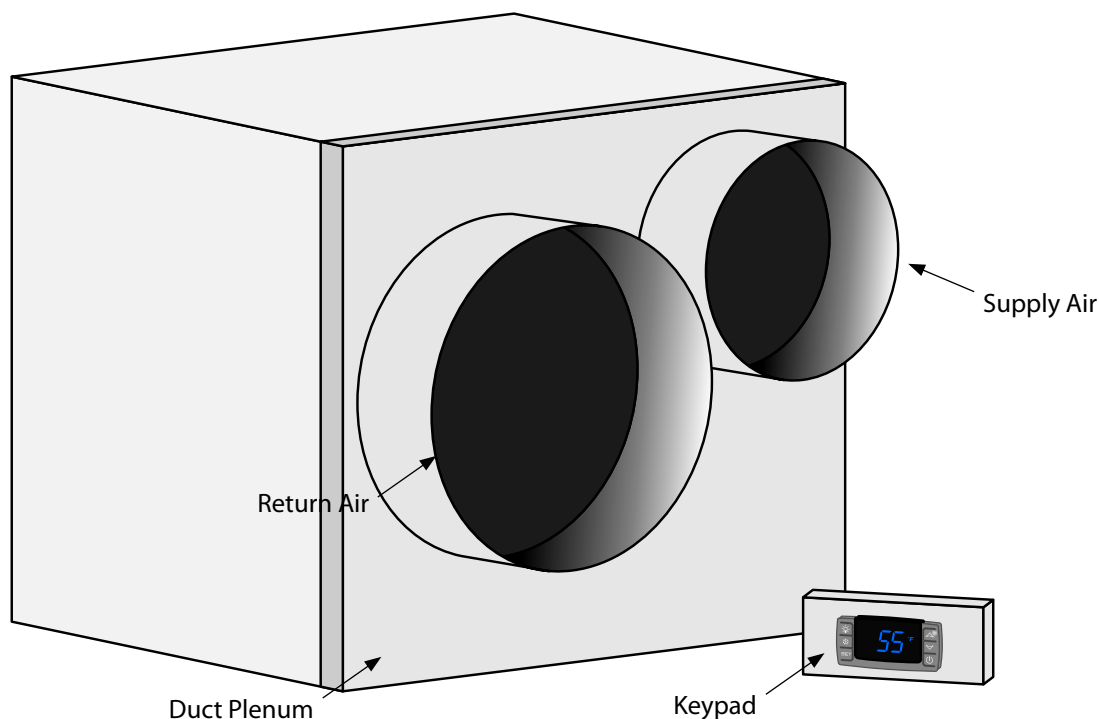


## WM UNIT SPECIFICATIONS

Model	3500 Evaporator (Fan Coil Unit)	3500 Condenser (Air Cooled Condensing Unit)	5000 Evaporator (Fan Coil Unit)	5000 Condenser (Air Cooled Condensing Unit)
Cellar Size (cu. ft.)	1000		2000	
Dimensions	20.5" w x 15.625" h x 16.0625" d	12" w x 13.5" h x 18" d	20.5" w x 15.625" h x 16.0625" d	12" w x 13.5" h x 18" d
BTU/h with 90° air entering the Condenser Coil	3650		4450	
CFM	270	190	278	350
Refrigerant	R-134a			
Condensing Unit HP	1/3++		1/2	
Voltage Rating (20 amp dedicated circuit required)	115V or 230V			
Weight (lbs)	56	56	56	66
AMPS (Starting/Running)	2/1	32.7/7.2	2/1	48/9.5
dBA	54	65	54	65
Drainline	1/2" Condensate			
Installation	Evaporator Unit (Fan Coil Unit) is installed in the cellar or up to 25 ducted ft. away, condenser is installed up to 100 ft from Evaporator Unit (Fan Coil Unit)			
Thermostat	Digital Control Display			
Temp. Delta	55°F Temperature differential between the cellar temperature and condenser air intake temperature.			
Warranty	2 year parts and labor			

# QUICK REFERENCE GUIDE

## FD Evaporator Unit (Fan Coil Unit) Front / Side View



## DUCTED FD UNIT SPECIFICATIONS

Model	3500 Evaporator (Fan Coil Unit)	3500 Condenser (Air Cooled Condensing Unit)	5000 Evaporator (Fan Coil Unit)	5000 Condenser (Air Cooled Condensing Unit)
Cellar Size (cu. ft.)	1000		2000	
Dimensions	20.5" w x 15.625" h x 20" d	12" w x 13.5" h x 18" d	20.5" w x 15.625" h x 20" d	12" w x 13.5" h x 18" d
BTUh with 90° air entering the Condenser Coil	3120		3788	
CFM	200	190	200	350
Refrigerant	R-134a			
HP	1/3++		1/2	
Voltage Rating (20 amp dedicated circuit required)	115V or 230V			
Weight (lbs)	56	56	56	66
AMPS (Starting/Running)	2/1	32.7/7.2	2/1	48/9.5
dBA	54	65	54	65
Drain Line	1/2" Condensate			
Installation	Use 8" supply and 10" return insulated ducting. Ducting should not exceed 25 ft. from the cellar.			
Thermostat	Optional Digital Remote Display			
Temp. Delta	55°F Temperature differential between the cellar temperature and condenser intake air temperature.			
Warranty	2 year parts and labor			

# RECEIVING & INSPECTING THE SYSTEM

## Receiving and Inspecting the System

- Lift only at the designated hand hold locations on the shipping container or fully support the unit from underneath. A shipment may include one or more boxes containing accessories.
- Before opening the container, inspect the packaging for any obvious signs of damage or mishandling.
- Write any discrepancy or visual damage on the Bill of Lading before signing.
- Allow the condensing unit to sit for 24 hours prior to start up. The condensing unit can be placed in the installation location, piped and evacuated during this time.

**Note:** CellarCool units are manufactured in the USA and tested prior to shipment.

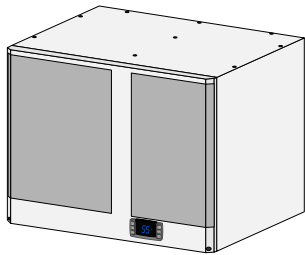
## Review the Packing Slip to Verify Contents

- Check the model number to ensure it is correct.
- Check that all factory options ordered are listed.

**If any items listed on the packing slip do not match your order information, contact CellarCool Customer Service immediately.**

## Check the Box for the following contents:

### Main Evaporator Box

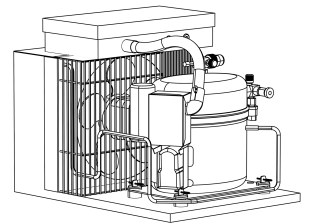


(1) WM Evaporator Unit (Fan Coil Unit)

(1) Installation Kit which includes:

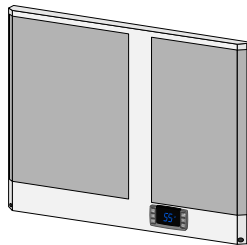
- (2) 1/2" 90° Barb fittings
- (1) 1/2" barb tee
- (1) 10 ft. 1/2" Drain Line
- (4) 1 3/4" hex head screws
- (1) Bypass plug
- (2) Cable tie mounts and cable ties
- (1) Black Strain relief
- (1) 1/4" sight glass
- (1) 1/4" filter drier

### Main Condensing Unit Box



(1) Condensing Unit

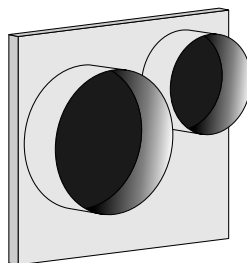
### Wall-Mount Accessory Kit



(1) Filter Grille

- (1) WM&FD Tech Manual
- (1) WM&FD Owners Manual
- (1) Split System Warranty Checklist
- (10) 6-32 3/8" Phillips Pan Head Screw
- (1) Display Adapter

### Ducted Accessory Kit



(1) Duct Plenum

- (1) WM&FD Tech Manual
- (1) WM&FD Owners Manual
- (1) Split System Warranty Checklist
- (1) 50 ft. Air Sensing Probe
- (1) Remote Keypad
- (1) 50 ft. Keypad Communication Cable

Please leave the unit in its original box until you are ready for installation. This will allow you to move the product safely without damaging it. When you are ready to remove the product from the box, refer to the installation instructions.

**TIP:** Save your box and all packaging materials. They provide the only safe means of transporting/shipping the unit.

# BEFORE YOU START

1. **Inspect all components prior to installation.** If damage is found, please contact your distributor or CellarCool Customer Service at 1.800.343.9463.
2. The Condensing Unit **requires a dedicated 115-volt 20-amp circuit.** Use a surge protector with the unit. **Do not use a GFI** (Ground Fault Interrupter) line.
3. It is **REQUIRED** to **install a drain line** to remove condensation from the Evaporator Unit (Fan Coil Unit).
4. The system is intended **for use in properly designed and constructed wine cellars.** Hire a professional wine storage consultant with a valid contractor's license to build your wine cellar.
5. CellarCool requires that all Split Systems are installed by a certified HVAC-R technician only, Nate or equivalent is recommended.
6. Warranty is not active until a Warranty Checklist has been received, reviewed, and approved.

If you encounter a problem with your CellarCool system, please refer to the Troubleshooting Guide on page 40. If you have any further questions, concerns, or need assistance, please contact CellarCool's Customer Service at 1.800.343.9463. Please be sure all testing has been completed prior to contacting Customer Service. Please have your results ready for your representative.



# PREPARING THE WINE CELLAR

The performance and life of your system is contingent upon the steps you take in preparing the wine cellar.

**Note:** Improperly preparing your enclosure or incorrectly installing your unit may cause unit failure, leaking of condensation, and other negative side effects.

## **IT IS HIGHLY RECOMMENDED THAT YOU OBTAIN THE ASSISTANCE OF A WINE STORAGE PROFESSIONAL.**

Wine storage professionals work with licensed contractors, refrigeration technicians, and racking companies to build well-insulated, beautiful, and protective wine cellars. CellarCool has put together some useful tips to assist in the installation process. Our recommendations are meant to act as a guide in the process of building a proper enclosure. Your intended location may have specific needs that we do not address.

### **Wall & Ceiling Framing**

Build wine cellar walls using standard 2x4 or 2x6 construction methods and ceiling joists following the guidelines of local and state codes in your area. As a general rule, the thicker the walls and the higher the insulation value in your cellar, the better it will be at maintaining a consistent temperature.

### **Insulation**

Insulation is **REQUIRED** with the use of the CellarCool product. Standard fiberglass or rigid foam insulation is normally used in cellar construction or, in some cases, "blown-in" insulation is used. It is very important that all walls and ceilings are insulated to keep the cellar temperature as consistent as possible during the summer and winter months. The R-value, or quality of insulation, is determined by the rate at which heat passes through the insulation. The higher the R-value, the more resistant the insulation is to conducting heat. Using higher R-values in insulation will lower your operating costs and unit run time. (R-13 minimum, R-19 recommended, R-30 for ceiling and exterior walls.)

### **Vapor Barrier**

Water vapor creates its own pressure, separate from the air pressure, and will intrude into colder/drier areas. A vapor barrier is **REQUIRED** to prevent the intrusion of water vapor so that the cellar can be kept at the correct temperature and humidity. 6 mm plastic sheeting (recommended) should be applied to the warm side of the cellar walls. The vapor barrier must also be applied to the outside walls and ceiling. If it is impossible to reach the outside, then the plastic must be applied from within the cellar. The most common method is to wrap the entire interior, leaving the plastic loose in the stud cavity so the insulation can be placed between each stud. All of the walls and ceiling must be wrapped in plastic for a complete vapor barrier.

In areas of high humidity, such as Southern and Gulf States, the vapor barrier will prevent infiltration of warm moist air. The moist air can cause mold to form, and standing water in drain pans promote microbial and fungal growth that cause unpleasant odors and indoor air quality problems. If mold is found, remove it immediately and sanitize that portion of the unit. Note: High humidity significantly increases the heat load on the cooling system.

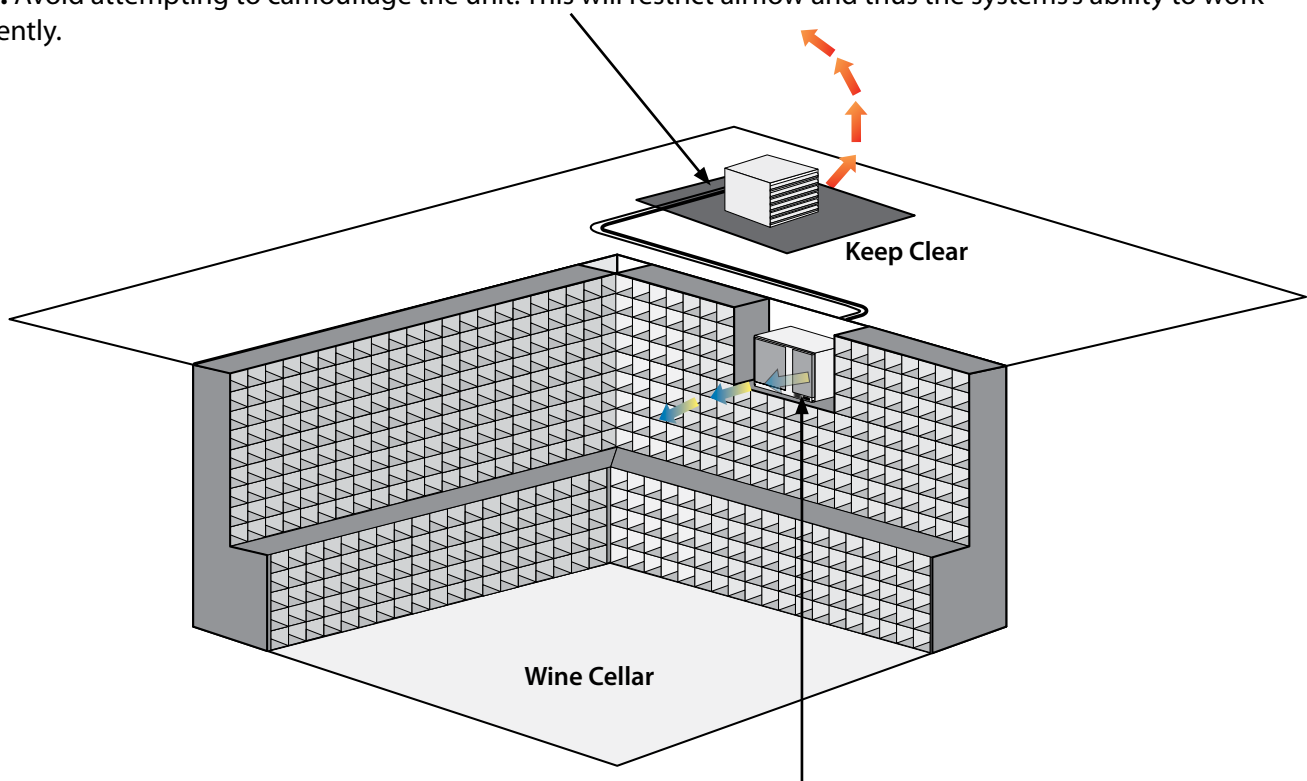
Any break in the vapor barriers (cut, nail hole, over-lapping, etc) will allow a moisture leak and must be sealed. Electric conduit is a "duct" for vapor to travel in. The conduit should be caulked and sealed on the warm air end.



### Unobstructed Airflow

Unobstructed airflow to and from the system is critical for the system's overall performance and life-span. A minimum three-foot clearance (five foot is ideal) area is crucial. The air the fans blow needs to circulate and either dissipate or absorb heat from the space, the more air to exchange the more efficient the system will operate.

**Note:** Avoid attempting to camouflage the unit. This will restrict airflow and thus the systems's ability to work efficiently.



### Mounting the Unit

The evaporator unit must be mounted within 18" of the top of the room in order to achieve sufficient cooling. As the room cools down, the warm air will rise to the ceiling. Mounting the unit high in the room will create a consistently cool environment by capturing the warm air and replacing it with cool air. Mounting the unit low in the room will result in a temperature variation in the room due to the unit's inability to draw warm air from the ceiling of the cellar to the unit itself, and cold air settling to the floor.

### Door and Door Seal

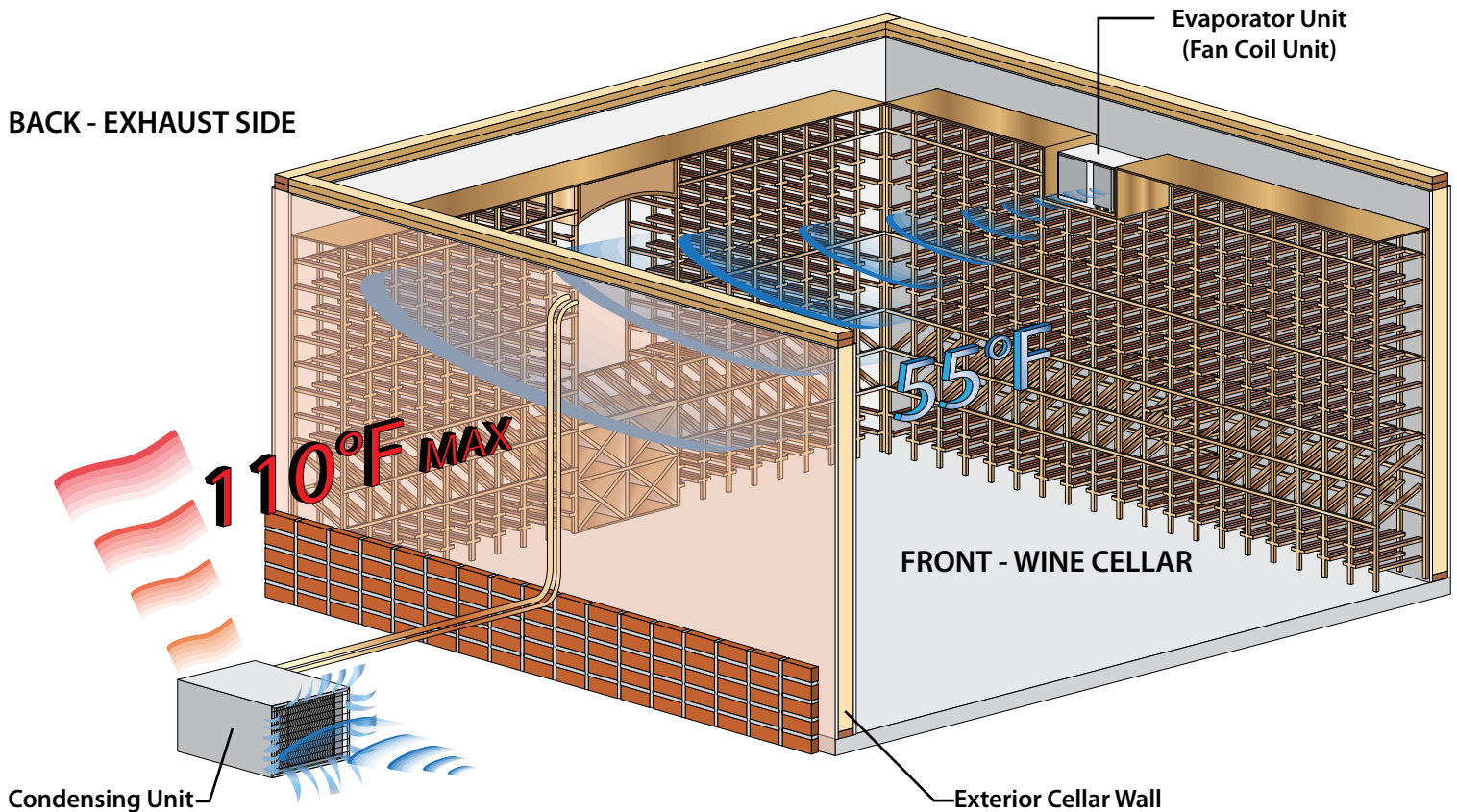
An exterior grade (1 3/4") door must be installed as a cellar door. It is very important that weather stripping is attached to all 4 sides of the doorjamb. A bottom "sweep" or threshold is also required. The door must have a very good seal to keep the cool cellar air from escaping out of the cellar. One of the most common problems with cooling systems running continually is due to the door not sealing properly. **In cases where glass doors are used and the room size is close to the recommended system size, the next larger size CellarCool system should be used.** This will compensate for the insulation loss due to the lower insulating rating of glass.



## Ventilation

The necessity of dissipating heat away from the condensing unit is critical to the performance and cannot be overstated. As the system operates and cools, a greater amount of heat is generated on the condensing side of the system. Adequate ventilation is required in order to dissipate heat away from the condensing unit. If ventilation is inadequate, the exhaust will heat up the area or room and adversely affect the systems ability to cool. In some cases, it may be advisable to install a vent fan to dissipate heat within the exhaust area on the condensing side of the system. However, you must have a fresh air inlet as well.

**Note:** If you are unsure about having adequate ventilation in your install location, please contact us to assess your specific installation at [support@whisperkool.com](mailto:support@whisperkool.com) or 1.800.343.9463.



## Ambient Temperature Factor

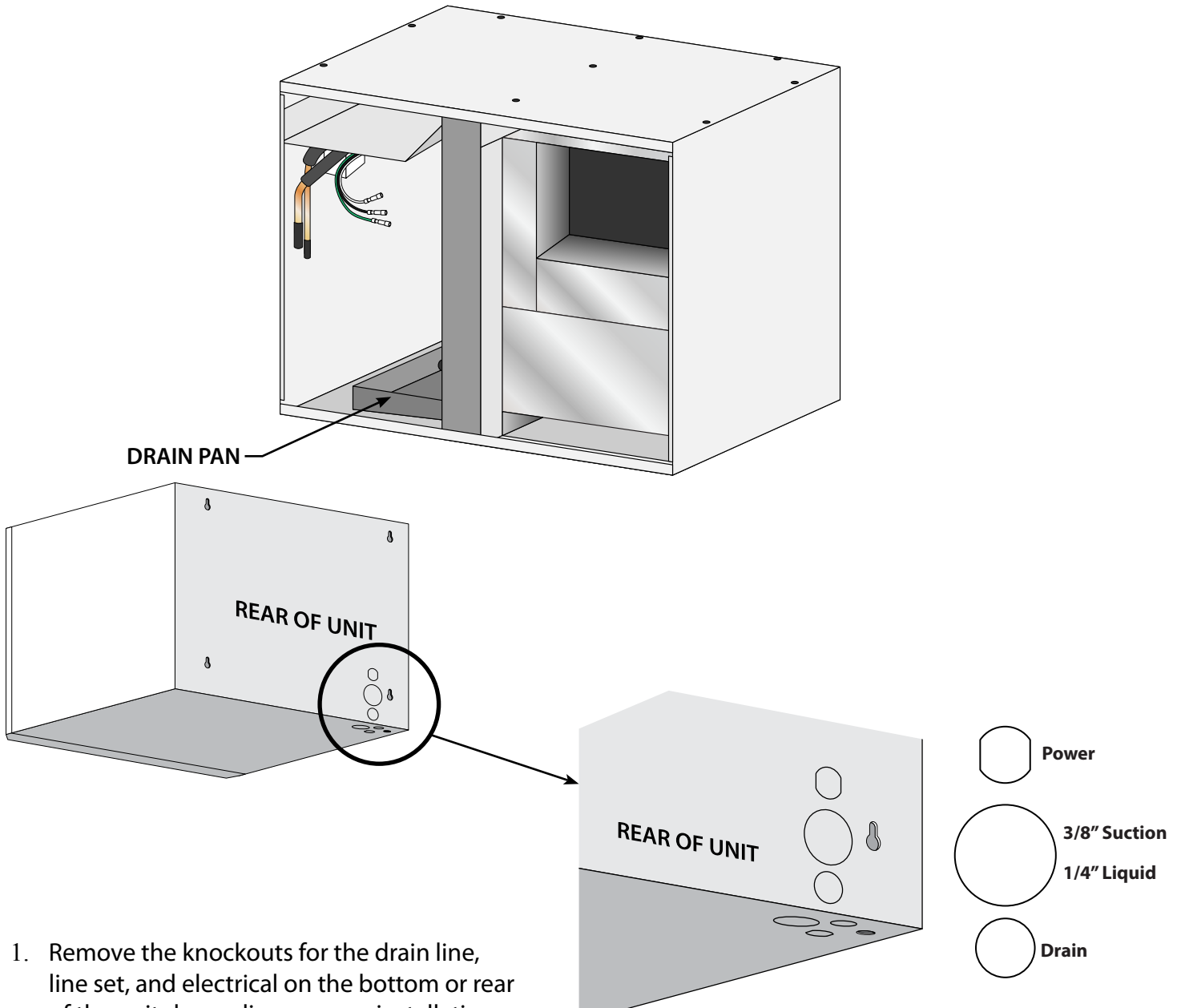
The cooling system has the ability to cool a wine cellar efficiently to 55°F as long as the ambient temperature of the area that it is exhausting to does not exceed 110°F. Therefore, you want to exhaust the condensing unit in a space which will not exceed 110°F. Otherwise the system will not have the capacity to keep the wine at a desirable 55°F.

**Warning, allowing your system to operate in high ambient temperatures for extended periods of time will greatly decrease the life of your system and void your warranty. The cooler the temperature of the air entering the condenser coil the more cooling capacity the system has. The less heat gain through the common wall, the less the electricity consumption.**

# PREPARING AND INSTALLING THE WALL MOUNT EVAPORATOR UNIT (FAN COIL UNIT)

## Required Tools:

- |                         |                             |                 |          |
|-------------------------|-----------------------------|-----------------|----------|
| • Drill                 | • 1/4" Wrench               | • Brazing Torch | • Level  |
| • 5/32" Drill Bit       | • Phillips Head Screwdriver | • Drywall Saw   | • Pliers |
| • 1/4" Socket Drill Bit | • Tape Measure              | • Ladder        | • Pencil |

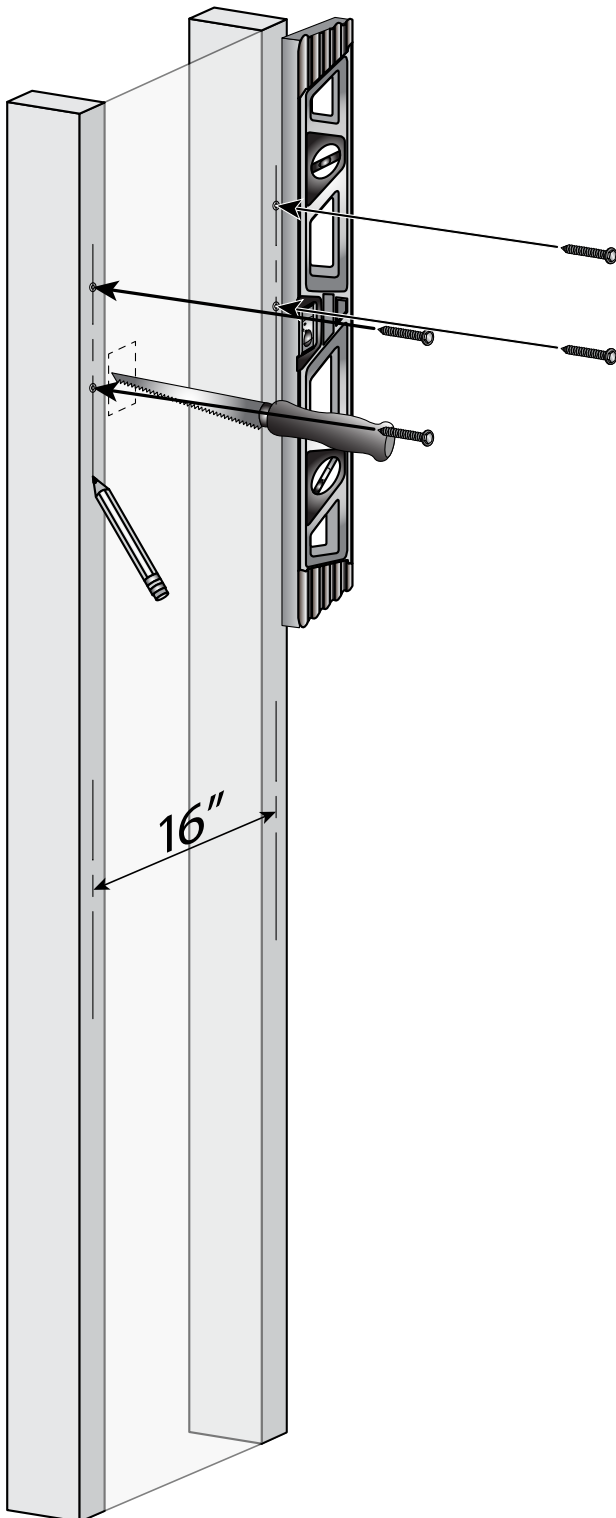


1. Remove the knockouts for the drain line, line set, and electrical on the bottom or rear of the unit depending on your installation preference.
2. Remove the insulation from the knockout holes.
3. For ease of installation, remove the 9 screws securing the top and remove the top.

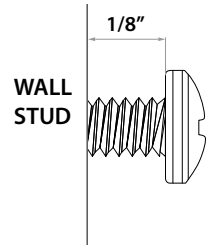
# INSTALLING THE WALL MOUNTED EVAPORATOR (FAN COIL UNIT)

1. Locate 2 wall studs in the desired mounting location spaced 16" on center.
2. Mark vertical lines on each stud 16" apart.
3. Mark an intersecting, horizontal line at the desired height of the unit.
4. Make a mark on each stud 13 1/2" down from the intersection of the horizontal and vertical lines.

**Note:** The top of the unit needs to be installed at a minimum of 6" and a maximum of 18" from the ceiling.

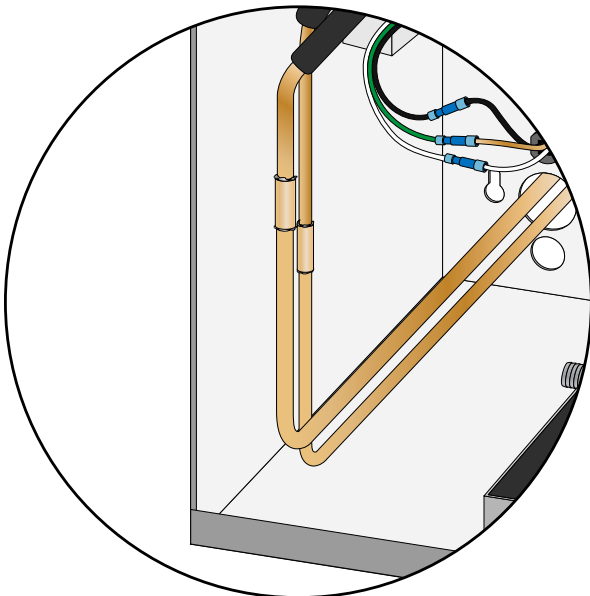
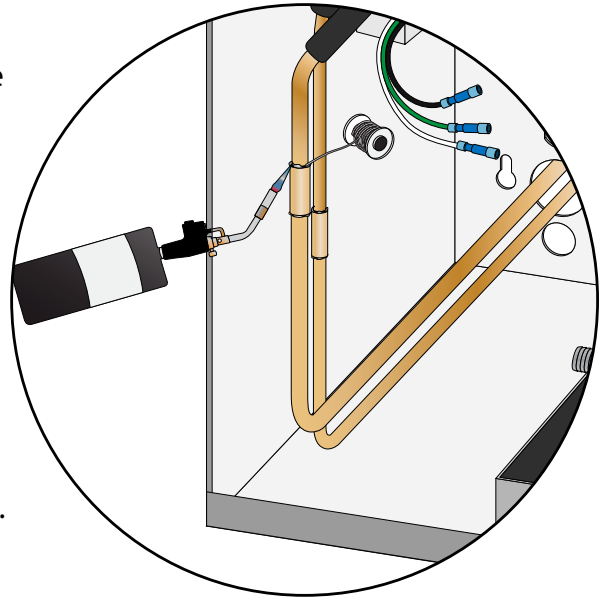


5. Install the 4 supplied 1 3/4" hex head screws into the studs at the locations marked leaving 1/8" between the wall surface and screw head.
6. If routing through a wall, cut out an access hole for the line set, drain line and electrical.
7. Raise the evaporator to the installation location. Align the rear key holes with the mounting screws and mount the unit.
8. Using a 1/4" wrench or socket, tighten the top mounting screws.



# INSTALLING THE WALL MOUNTED EVAPORATOR (FAN COIL UNIT)

9. Using 1/4" and 1/2" copper tubing, route the liquid and suction lines through the knockouts in the wrapper. Be sure to extend the tubing far enough outside of the wrapper to extend through the wall if necessary. Note: 1/2" copper tubing will slip over the 3/8" suction line on the evaporator for an easy connection.
10. Remove the solenoid coil and wrap the solenoid valve with a wet rag to prevent overheating.
11. To prevent oxidation, purge nitrogen through the system.
12. Braze the copper tubing to the connections on the evaporator unit.
13. Insulate the suction line using Armaflex or similar insulation.
14. Cut a short piece of 1/2" drain line and connect a 1/2" barb 90 to the drain line.
15. Route the drain line out of the wrapper through the hole for the drain line. Use the second barb 90 if going through the bottom of the wrapper. Be sure to extend the tubing far enough outside the wrapper to extend through the wall if necessary.
16. Using the cable ties and cable tie mounts provided, secure the drain line to the bottom of the wrapper to ensure a downward slope.
17. If you have purchased the Active Humidity Option, route the 1/4" water line out of the evaporator unit with the line set.
18. Route the power supply wires into the unit through the knockout.
19. Remove the wire nuts from the black, white and green wires located in the lower left corner of the evaporator unit.
20. Following the supplied wiring diagram, connect the power supply wires to the black, white and green wires using the supplied wire nuts (Hot=Black, Neutral=White, Ground= Green).
21. Install the supplied black strain relief to secure the power supply wires in the housing.



22. Route the display adapter through the grommet below the drip tray and into the blower compartment.
23. Connect the display adapter to the circular connector for the display located in the lower left corner of the housing.
24. If the unit was equipped with the Active Humidity Option, route the communication cable from the desired control mounting location into the evaporator unit.
25. Connect the communication cable to the circular connector located in the lower left corner of the housing.
26. Secure all wiring neatly and close to the left wall to minimize obstructing the airflow.



# DRAIN LINE

## Condensation Drain Line

The condensation drain line tube is used to remove excess condensation from the evaporator unit to a proper discharge location. It is important that the drain line tube is properly connected and used to prevent leakage and other problems associated with excess condensation.

**Failure to use the condensation drain line tube will void the warranty on the unit.**

## Drain Line

All systems come with a drain line for removal of excessive condensate. It is mandatory to install the drain line. During operation, the cooling system will strip excess water from the air in order to maintain the proper level of humidity within the cellar. However in extreme humidity, additional condensate will be removed. Thus the drain line will prevent overflow and leaking by allowing for discharge of the additional condensate.

### If the drain line is routed through the rear of the unit:

Insert the middle barb of the barbed tee fitting into to the end of the drain line coming from the evaporator. Rotate fitting so tee is in the orientation shown in the diagram on the right. Connect a three inch piece of 1/2" drain line to the barb on top. Connect the remaining "long" piece of drain tubing to the bottom barb of the tee. Route the drain line to an appropriate drain location.

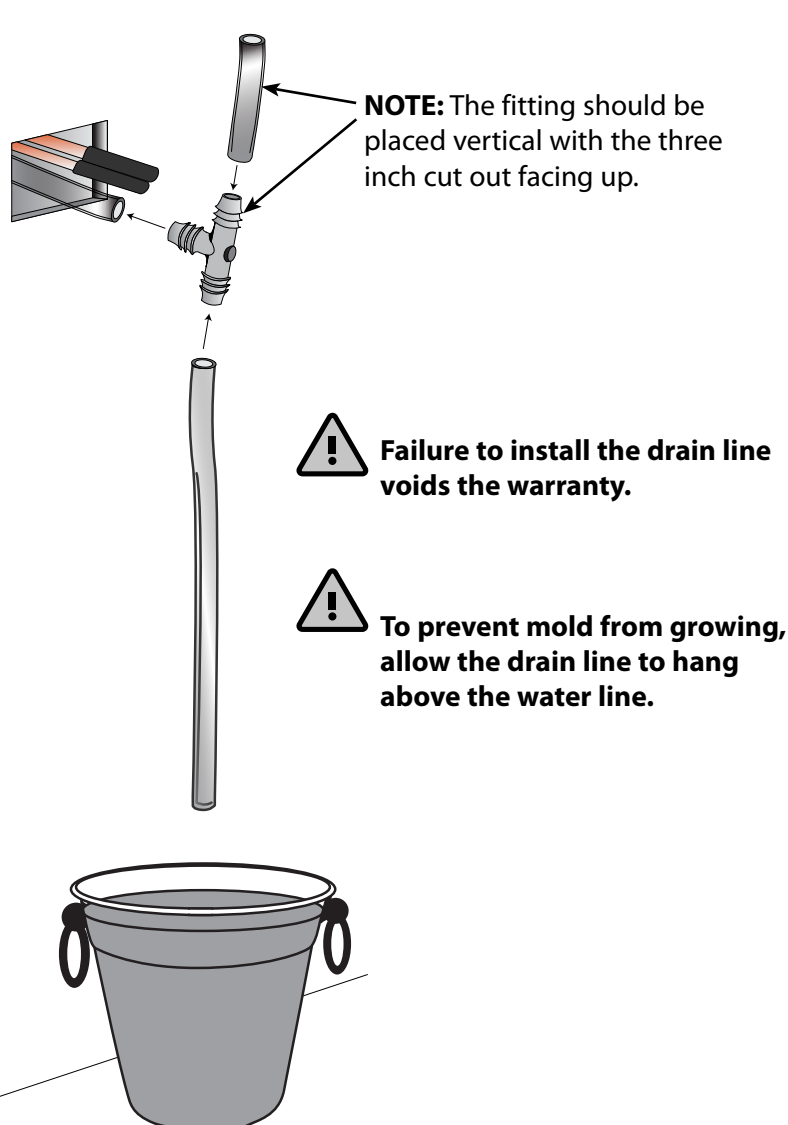
**NOTE:** The fitting should be placed vertical with the three inch piece facing up.

### If the drain line is routed through the bottom of the unit:

Connect the drain line directly to the second barbed 90 installed in step 15 of the installation instructions. Route the drain line to an appropriate drain location. No tee is required if draining through the bottom of the unit.



**WRONG:** Drain line is under water.

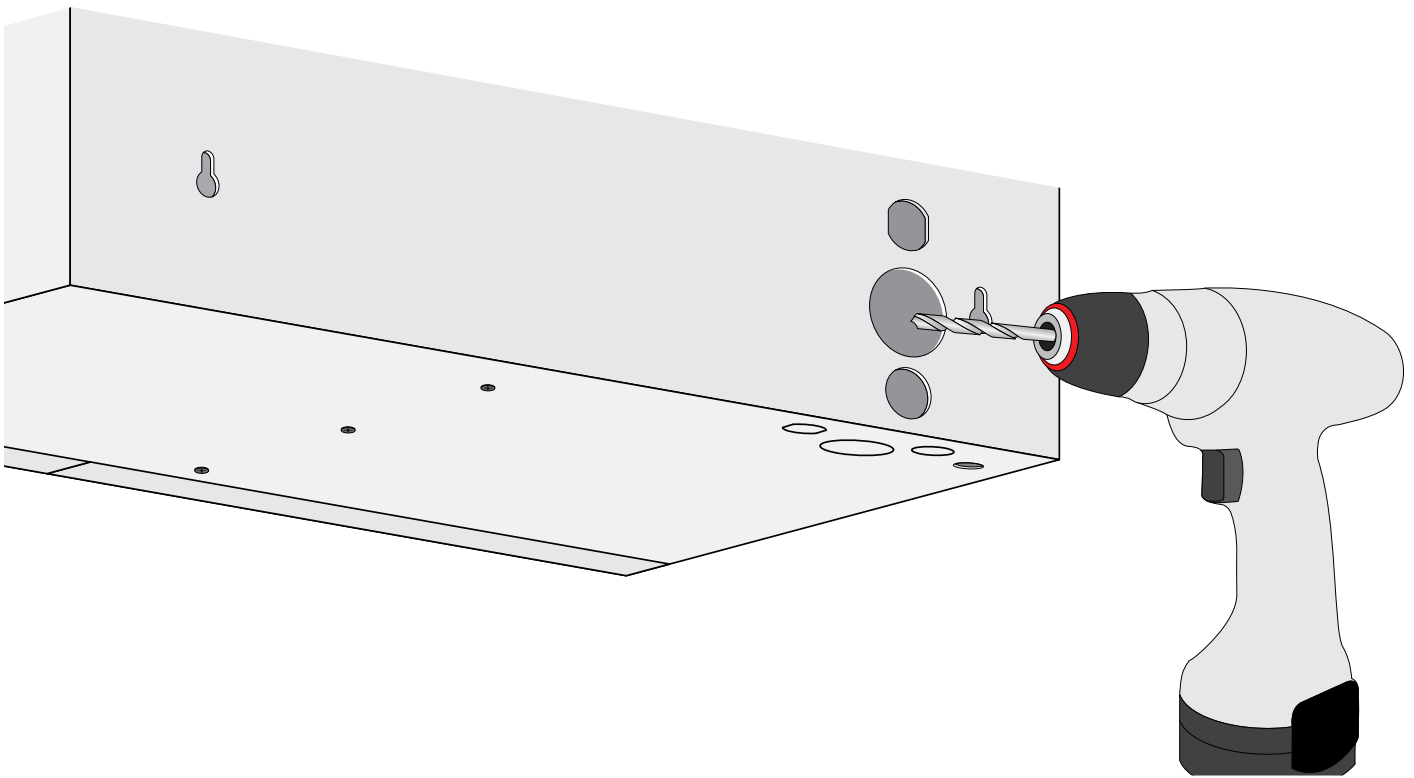


**NOTES**



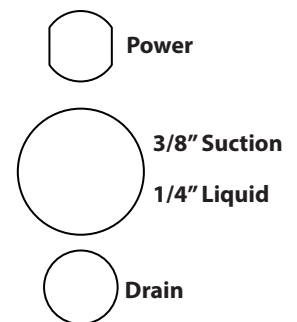
## PREPARING THE FULLY DUCTED EVAPORATOR (FAN COIL UNIT)

1. Remove the knockouts for the drain line, line set, and electrical on the bottom or rear of the unit depending on your installation location.
2. Remove the insulation from the knockout holes.
3. Route the air sensing probe from the cellar to the evaporator unit.
4. Follow the directions on page 18 to mount the remote keypad and run the communication cable to the evaporator unit.



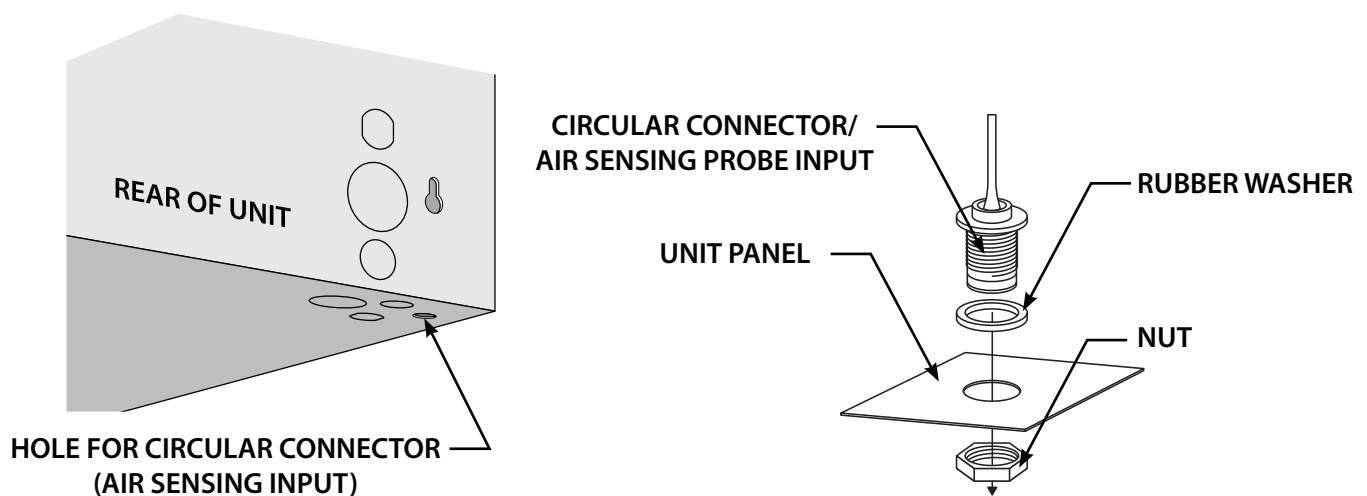
# INSTALLING THE FULLY DUCTED EVAPORATOR (FAN COIL UNIT)

1. If mounting the unit to a wall see steps 1-8 of the instruction for installing the Wall Mounted Evaporator Unit.
2. Using 1/4" and 1/2" copper tubing, route the liquid and suction lines through the knockouts in the wrapper. Be sure to extend the tubing far enough outside of the wrapper to extend through the wall if necessary. Note: 1/2" copper tubing will slip over the 3/8" suction line on the evaporator for an easy connection.
3. Remove the solenoid coil and wrap the solenoid valve with a wet rag to prevent overheating.
4. To prevent oxidation, purge nitrogen through the system.
5. Braze the copper tubing to the connections on the evaporator unit.
6. Insulate the suction line using Armaflex or similar insulation.
7. Cut a short piece of 1/2" drain line and connect a 1/2" barb 90 to the drain line.
8. Route the drain line out of the wrapper through the hole for the drain line. Use the second barb 90 if going through the bottom of the wrapper. Be sure to extend the tubing far enough outside the wrapper to extend through the wall if necessary.
9. Using the cable ties and cable tie mounts provided, secure the drain line to the bottom of the wrapper to ensure a downward slope.
10. If you have purchased the Active Humidity Option, route the 1/4" water line out of the evaporator unit with the line set .
11. Route the power supply wires and the circular connector from the 50' air sensing probe into the unit through the knockout for the electrical.
12. Remove the wire nuts from the black, white and green wires located in the lower left corner of the evaporator unit.
13. Following the supplied wiring diagram, connect the power supply wires to the black, white and green wires using the supplied wire nuts



## INSTALLING THE FULLY DUCTED EVAPORATOR (FAN COIL UNIT)

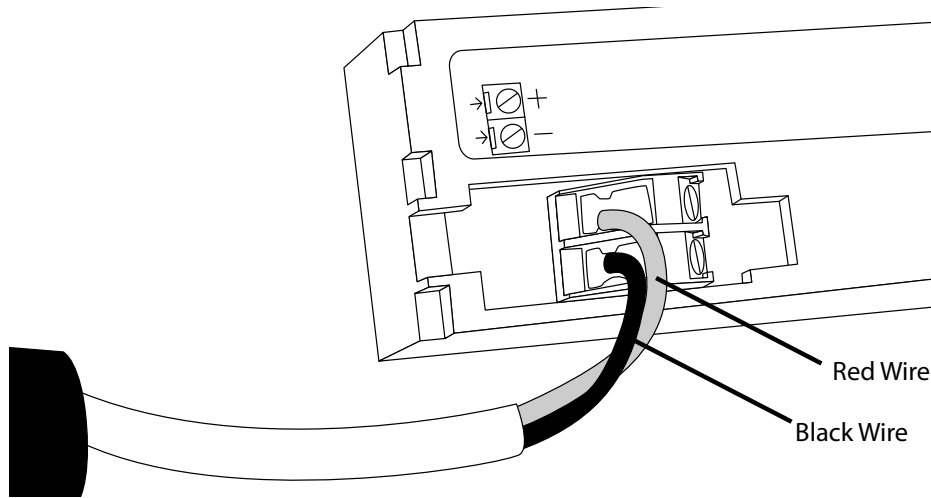
14. Connect the air sensing probe to the circular connector located in the lower left side of the housing.
15. Install the supplied black strain relief to secure the power supply wires and air sensing probe wire in the housing.
16. Route the communication cable from the remote display into the evaporator housing
17. Connect the communication cable to the circular connector located in the lower left corner of the housing.
18. If the unit was equipped with the Active Humidity Option, route the communication cable from the desired control mounting location into the evaporator unit.
19. Connect the communication cable to the circular connector located in the lower left corner of the housing.
20. Secure all wiring neatly and close to the left wall to minimize obstructing the airflow.
21. See page 13 for drain line routing instructions.



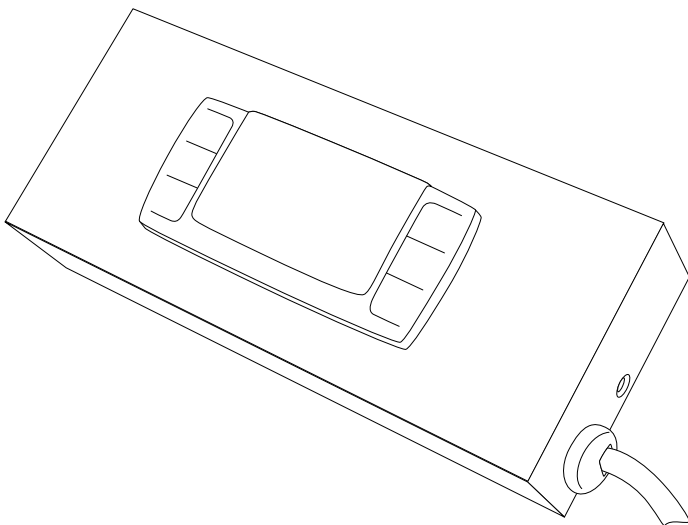
# REMOTE KEYPAD: INSTALLATION AND CONFIGURATION

If you have a system with a remote keypad, please review this section for installation.

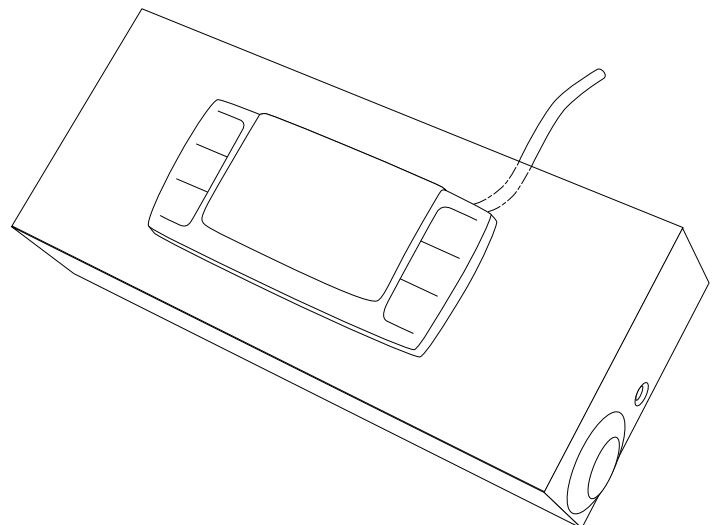
**Note:** 50 feet of communication line is included, the keypad can be installed up to 300 line feet away. Longer lengths of communication line can be ordered by calling 1-800-343-9463 ext. 751.



Route the communication line from the evaporator unit to the desired keypad location. Remove the wall mount bracket from the display housing. Using appropriate anchors or fasteners, secure the wall mount bracket to the wall. If routing the communication line through a wall, connect the wires to the back of the control following the image above. Connect the red wire to the upper (+) terminal. Connect the black wire to the lower (-) terminal. If the communication wire is not routed through the wall, remove the plug in the side of the display housing. Route the wire through the hole and connect to the back of the display as shown above.

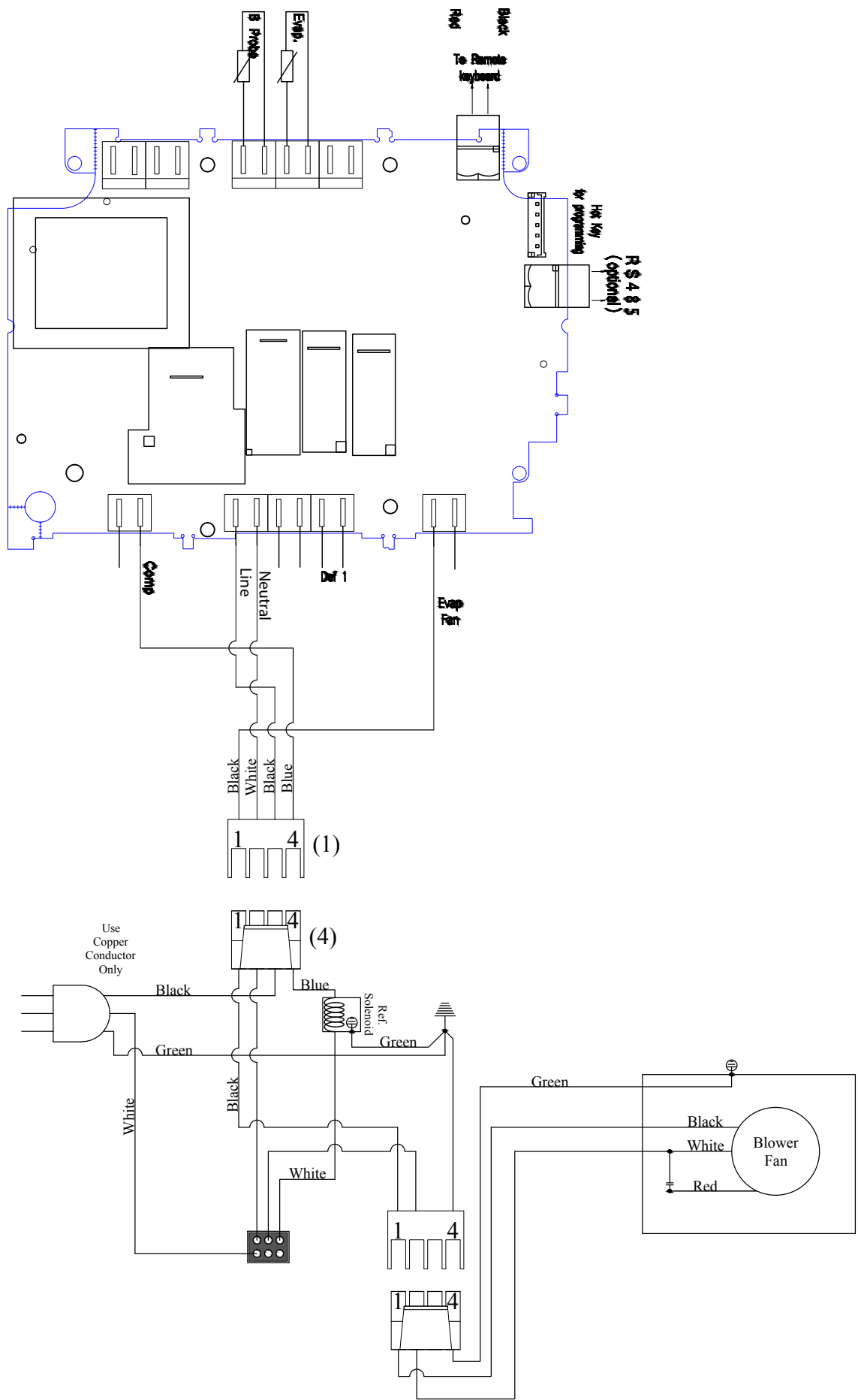


Connection wire in Side Mount configuration

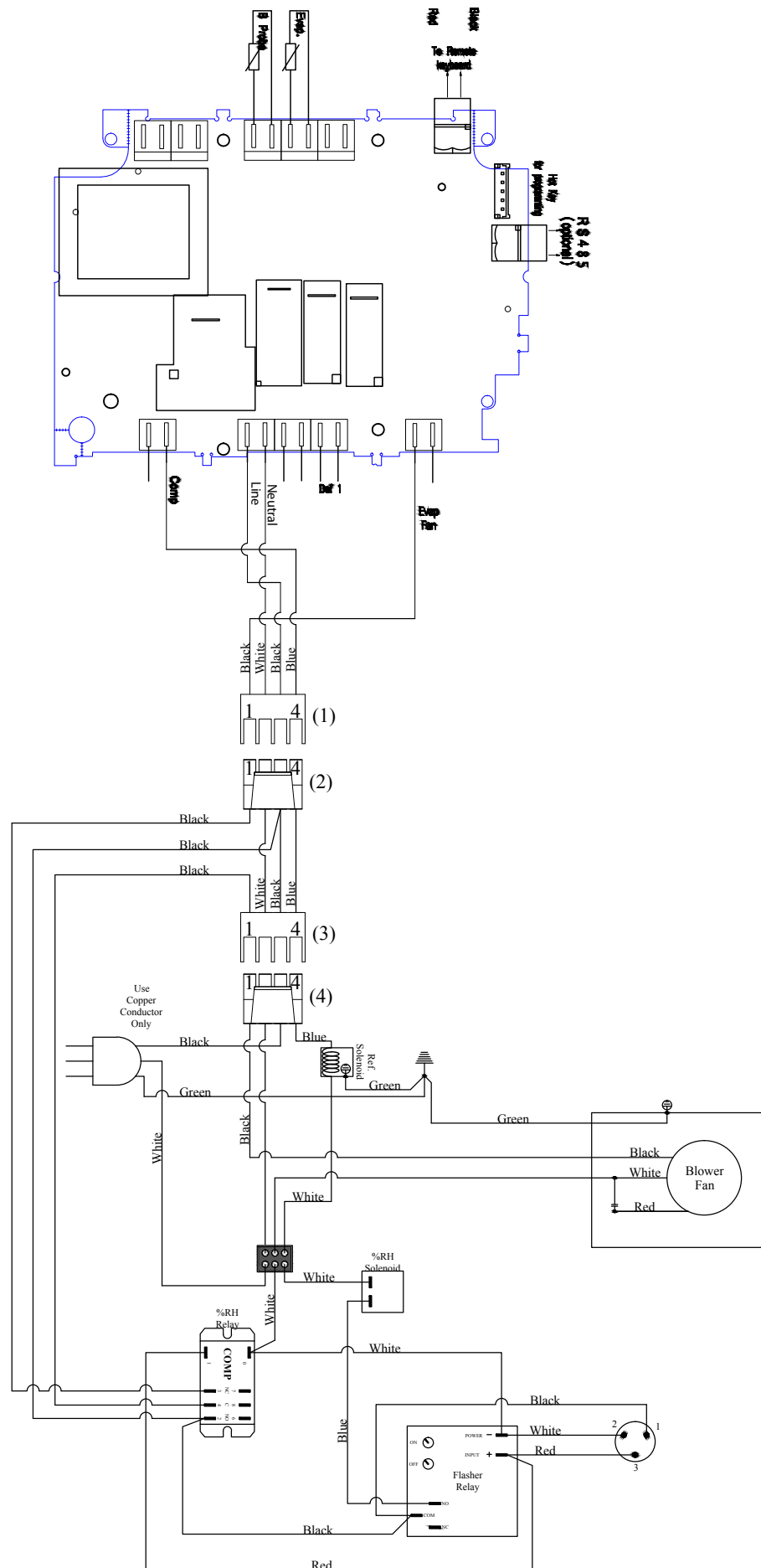


Connection wire in Rear Mount configuration

# WM&FD WIRING DIAGRAM



# WM&FD WITH HUMIDITY WIRING DIAGRAM



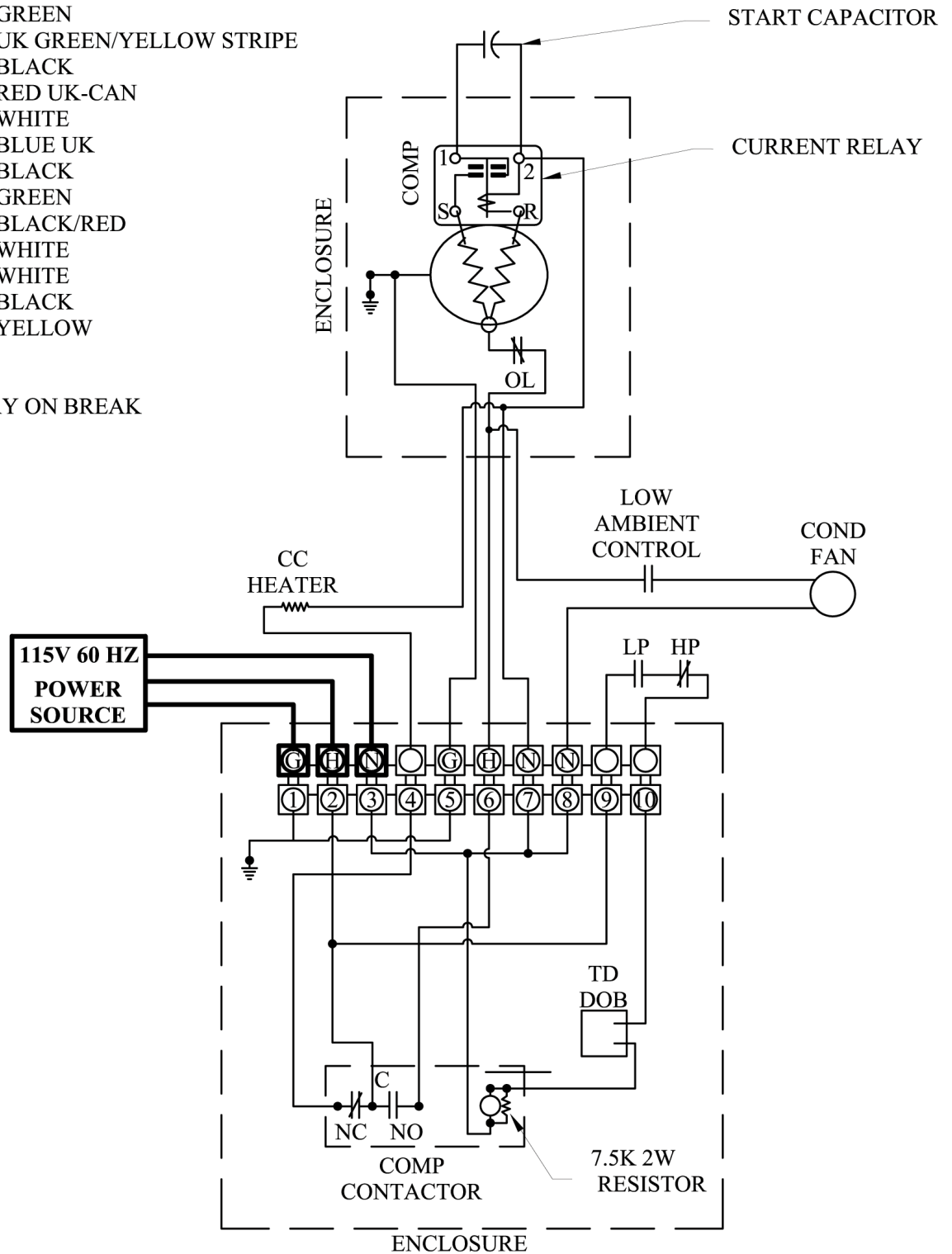
# 3500 CONDENSING UNIT WIRING DIAGRAM

## LEGEND: TERMINAL BOARD

BD #	SERVES	COLOR
------	--------	-------

1	GROUND	GREEN UK GREEN/YELLOW STRIPE
2	L1-115V-HOT	BLACK
3	115V-NEUTRAL	RED UK-CAN WHITE
4	CC HEATER	BLACK
5	COMP GND	GREEN
6	H-COMP	BLACK/RED
7	N-COMP	WHITE
8	N-COND FAN	WHITE
9	H-LP-HP	BLACK
10	LOAD TD&CC	YELLOW

TD=TIME DELAY, DELAY ON BREAK



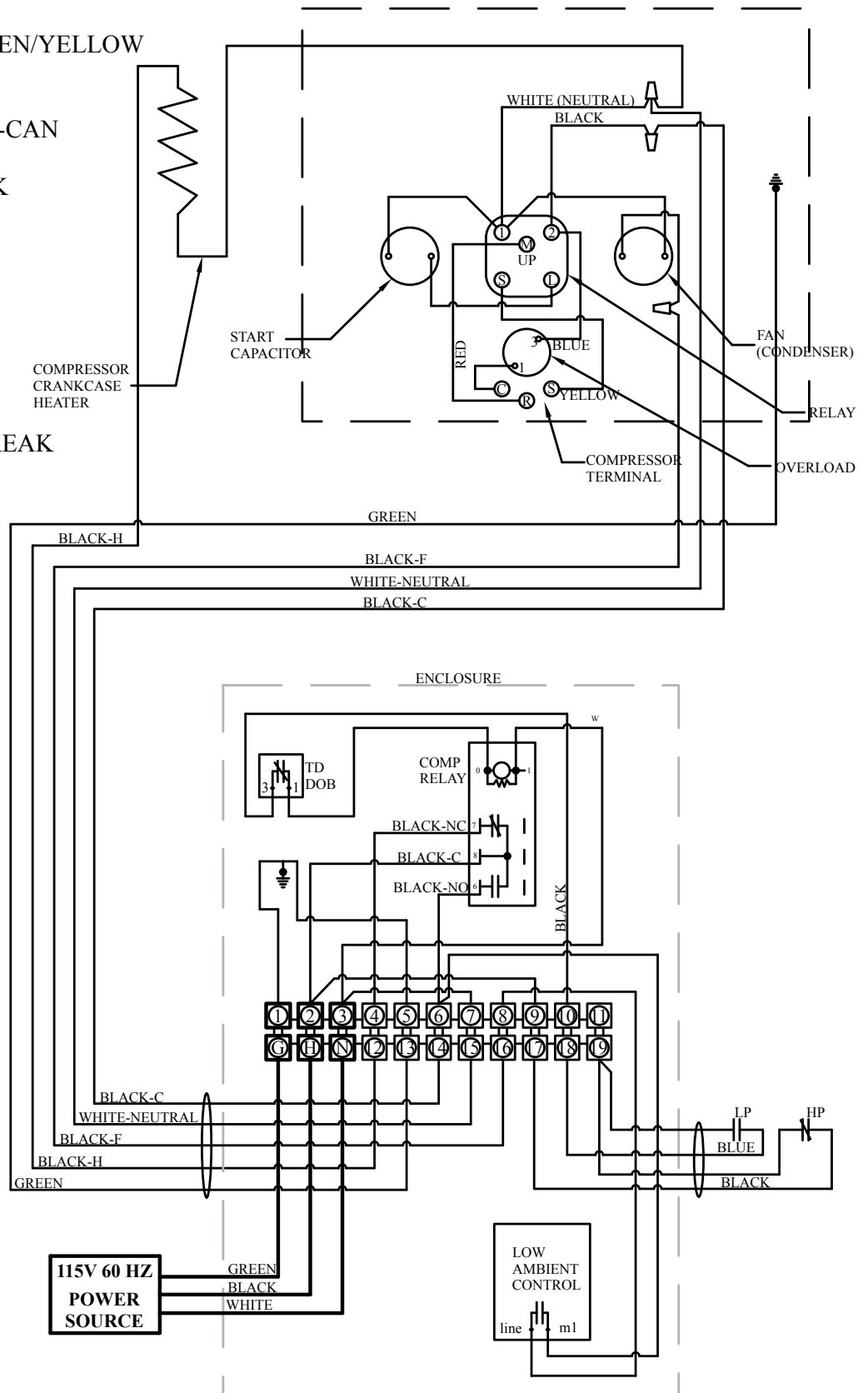
# 5000 CONDENSING UNIT WIRING DIAGRAM

## LEGEND: TERMINAL BOARD

BD #    SERVES                      COLOR

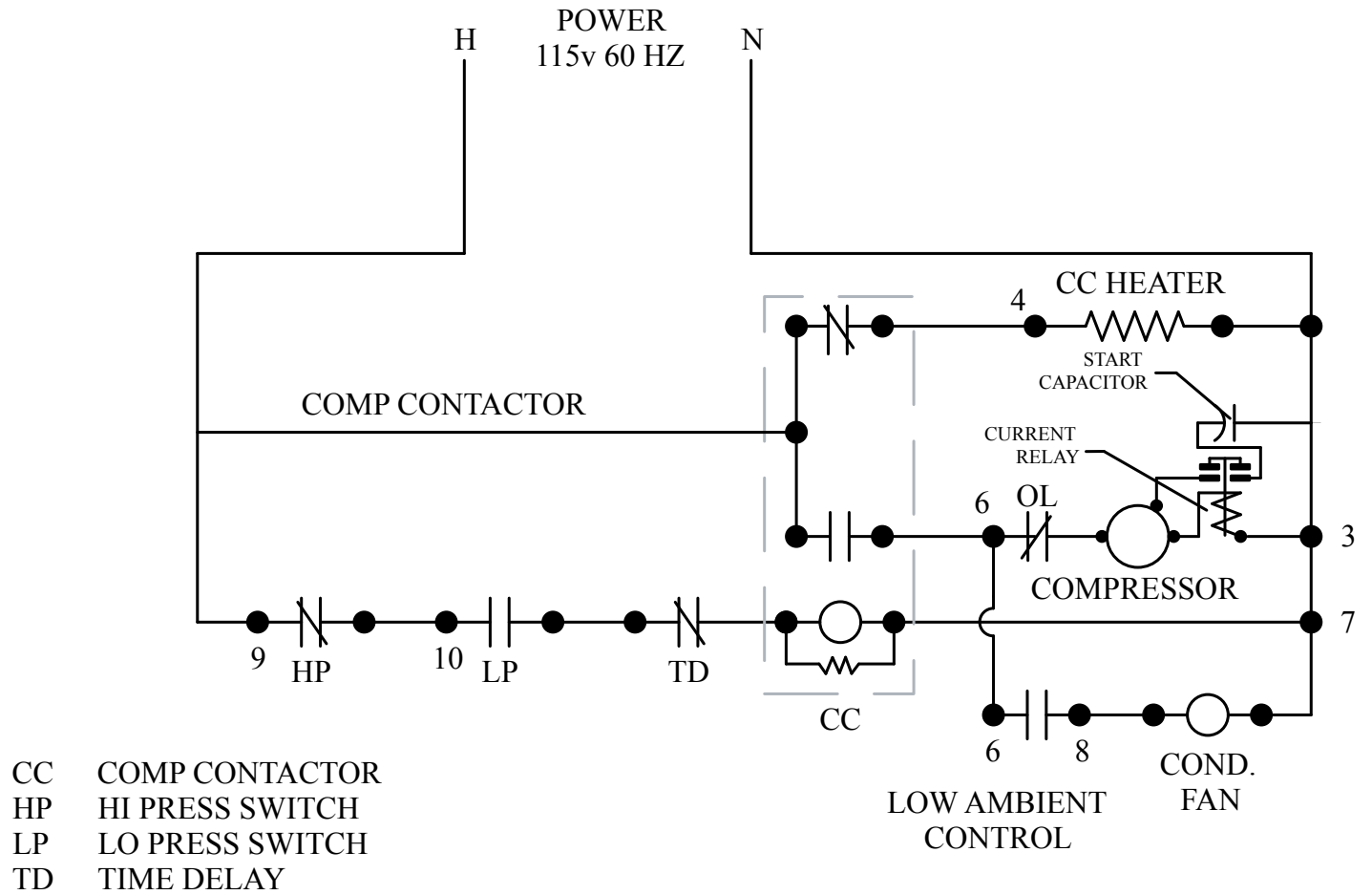
1	GROUND	GREEN UK GREEN/YELLOW STRIPE
2	L1-115V-HOT	BLACK RED UK-CAN
3	115V-NEUTRAL	WHITE BLUE UK
4	CC HEATER	BLACK
5	COMP GND	GREEN
6	H-COMP	BLACK
7	N-COMP	WHITE
8	H-COND FAN	BLACK
9	LINE H-LP-HP	BLACK
10	LOAD H-LP-HP	BLUE

TD=TIME DELAY, DELAY ON BREAK





# 5000 CONDENSING UNIT WIRING SCHEMATIC



# ACTIVE HUMIDITY OPTION OVERVIEW

## ACTIVE HUMIDITY SPECIFICATIONS

Power Consumption	0.2 amps @ 120V/60 Hz
dBA	TBD
Humidistat Range	30-90% RH
Humidistat Accuracy	± 1%
Humidistat Adjustment Increments	1%
Water Supply Feed Rate	0.63 gph @ 40 psi

### Accessory Included with Active Humidity Option:

- (1) 25 ft. Humidistat Cable
- (1) Dayton Humidistat

### Use of the Active Humidity Option

Humidity may fluctuate in the wine cellar. The Active Humidity Option stabilizes the environment by adding moisture when the wine cellar is becoming dry. Using a humidistat and a water source, the Active Humidity Option is able to regulate and establish a humid environment suitable for wine storage.

**Note:** The ideal humidity of a wine cellar is between 50-70%.

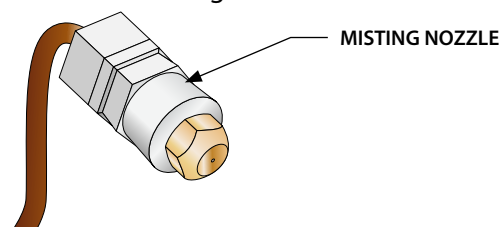
### General Active Humidity Option Recommendations

- Water source needs to have at least 40 psi.
- Water tubing size: 1/4" O.D.
- Water source should be tested for content and characteristics.
- In areas that are known to have hard water, the use of a Water-Softener System is required.

**Note:** Failure to install a Water-Softener or a Filtration system will allow an excessive particle residue buildup and may lead to system failure.

- Even if the area is not known to have hard water, the use of a Filtration System (Particle Filter) is required.
- Clean the evaporator coil every 3 months to remove particle residue buildup.
- It might be best to use a Self-Piercing Saddle Valve as a simple connection to a water source.
- Clean or replace the Misting Nozzle every 12 months.

**Do not** allow water leakage inside of the Unit.



### Self-Piercing Saddle Valve

Install a Self-Piercing Saddle Valve to a near by water supply for simple connection to a water source as shown in Figure 1.

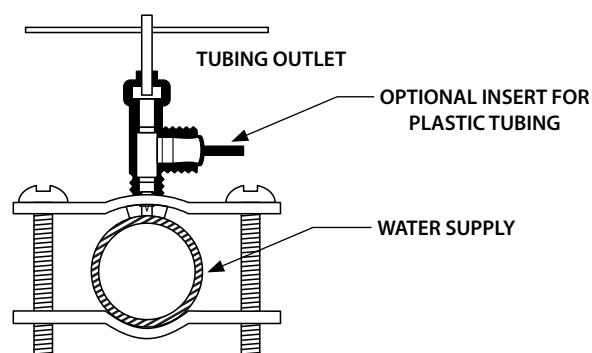


Figure 1

### Water Flow Order

- The water supply should pass through either a Water-Softener or a Filtration system before reaching the unit as shown in Figure 2.
- Route a 1/4" Copper, Pex or equivalent tubing from the water source and connect to the water inlet fitting on the unit as shown in Figure 3.
- Turn on the water and check for leaks.

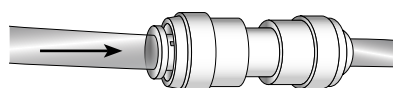


Figure 3

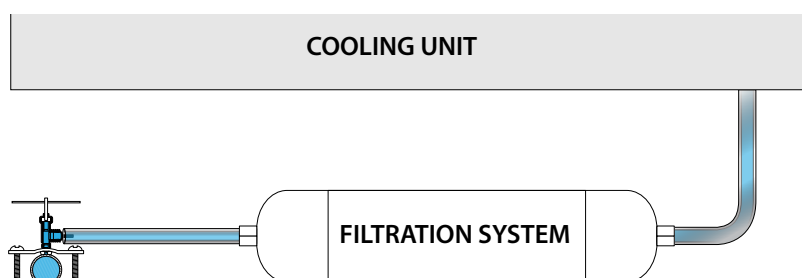


Figure 2

# HUMIDISTAT INSTALLATION

## Routing the Wiring

1. Plug the circular connector from the humidistat cable into the circular connector on the unit as shown in Figure 1.
2. Route the wire from the unit to the desired humidistat location.

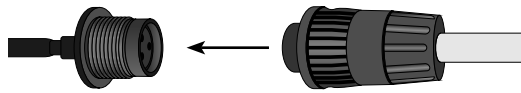


Figure 1

## Removing the Cover

1. Move both slide controls to the bottom position.
2. Use a screwdriver to loosen the screws at the bottom of the humidistat as shown in Figure 2.

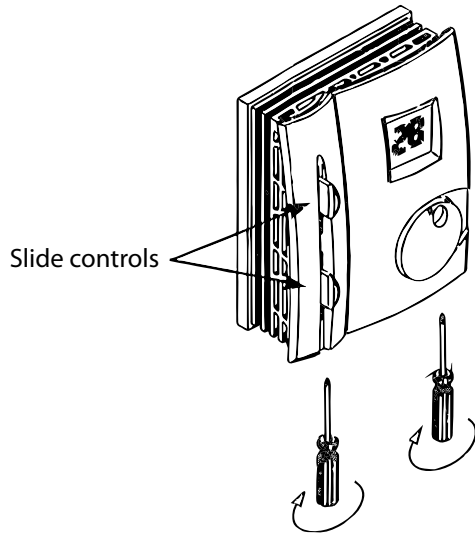


Figure 2

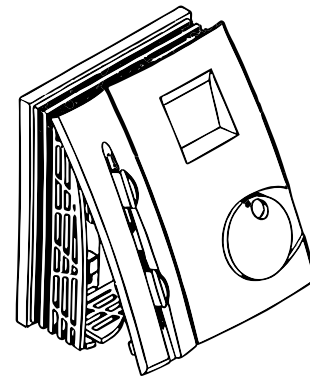


Figure 3

3. Carefully remove the cover as shown in figure Figure 3.

## Mounting Without a Wall Mount Plate

1. Make sure the humidistat electrical is unplugged before installing the unit.
2. Position the back half of the humidistat cabinet on the wall or junction box and ensure it is level and covers the junction box completely.
3. Pull the electrical wires through the hole at the terminal block of the humidistat.
4. Drill holes in the wall through the 2 mounting holes in the back of the humidistat cabinet as shown in Figure 4 and insert anchors into the holes.
5. Fasten the humidistat to the wall with screws through the mounting holes.

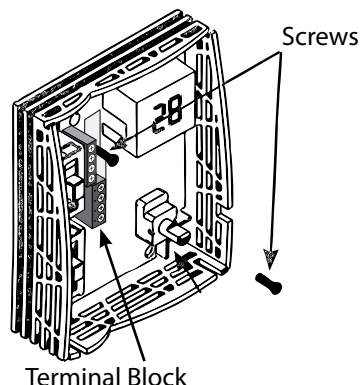
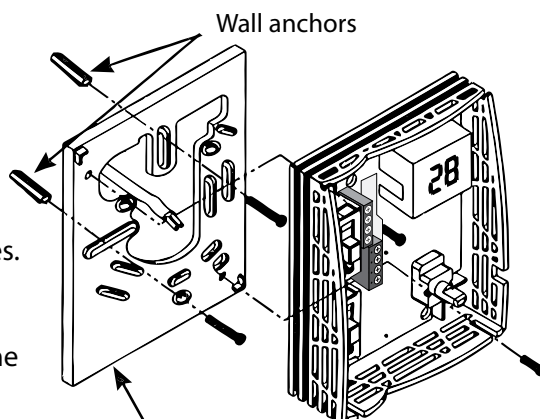


Figure 4

# HUMIDISTAT INSTALLATION

## Mounting With a Wall Mount Plate

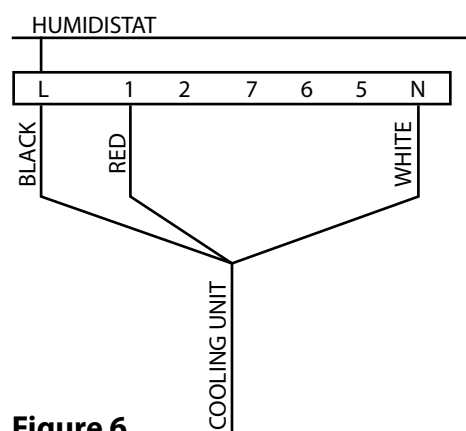
1. Make sure the humidistat is unplugged before installing the unit.
2. Position the wall mount plate on the wall or junction box and ensure the plate is level and covers the junction box completely.
3. Pull the electrical wires through the hole in the wall mount plate.
4. Drill holes in the wall through the 2 mounting holes in the back of the wall plate as shown in **Figure 5** and insert anchors into the holes.
5. Pull the electrical wires through the hole at the terminal block.
6. Fasten the wall plate with 2 screws through the mounting holes.
7. Then fasten the humidistat to the wall plate with screws through the mounting holes.



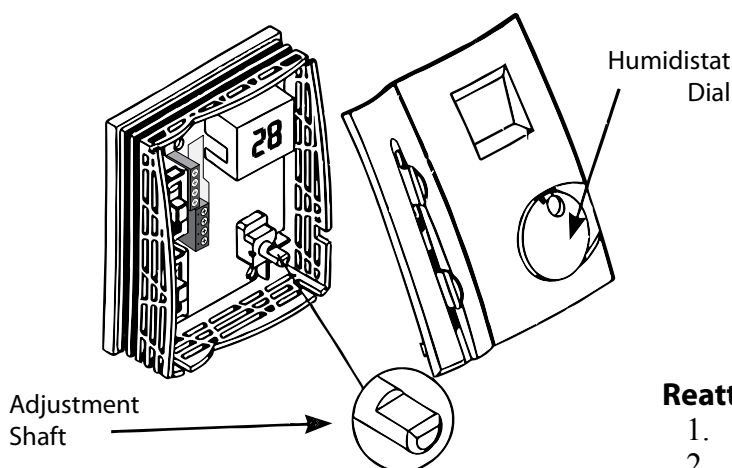
**Figure 5**

## Electrical Connection

1. Connect the electrical wires to the corresponding terminals on the terminal block following the circuit diagram inside the top cover of the unit. **See Figure 6**
2. Connect the white wire to the N terminal, the red wire to the 1 terminal and the black wire to the L terminal on the humidistat.



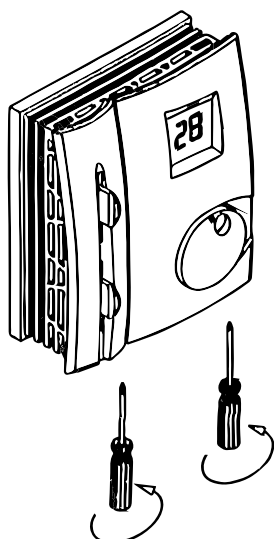
**Figure 6**



**Figure 7 - Make sure the Dial is Vertical and the Adjustment Shaft is Horizontal**

## Reattaching the Cover

1. Move both slide controls to the bottom position.
2. Align the humidistat adjustment shaft horizontally as shown in **Figure 7**.
3. In order for the humidistat dial to fit on the shaft, it must be aligned with the pointer above the dial.
4. Carefully attach the top cover and ensure the cover locks into place by pushing down on the top and then pushing inward toward the wall.
5. Attach the screws again at the bottom of the cover and tighten into place as shown in **Figure 8**.
6. Check that the adjustment dial and slide controls can be moved smoothly, otherwise remove the cover and check the alignment of the dial and the adjustment shaft and slide controls.



**Figure 8**

## Correct Humidistat Settings

1. Rotate the dial to the desired humidity level.
2. Set the bottom selector switch to the Humid setting.
3. Set the top selector switch to the Hi setting.

# PREPARING THE CONDENSING UNIT

## Electrical Needs

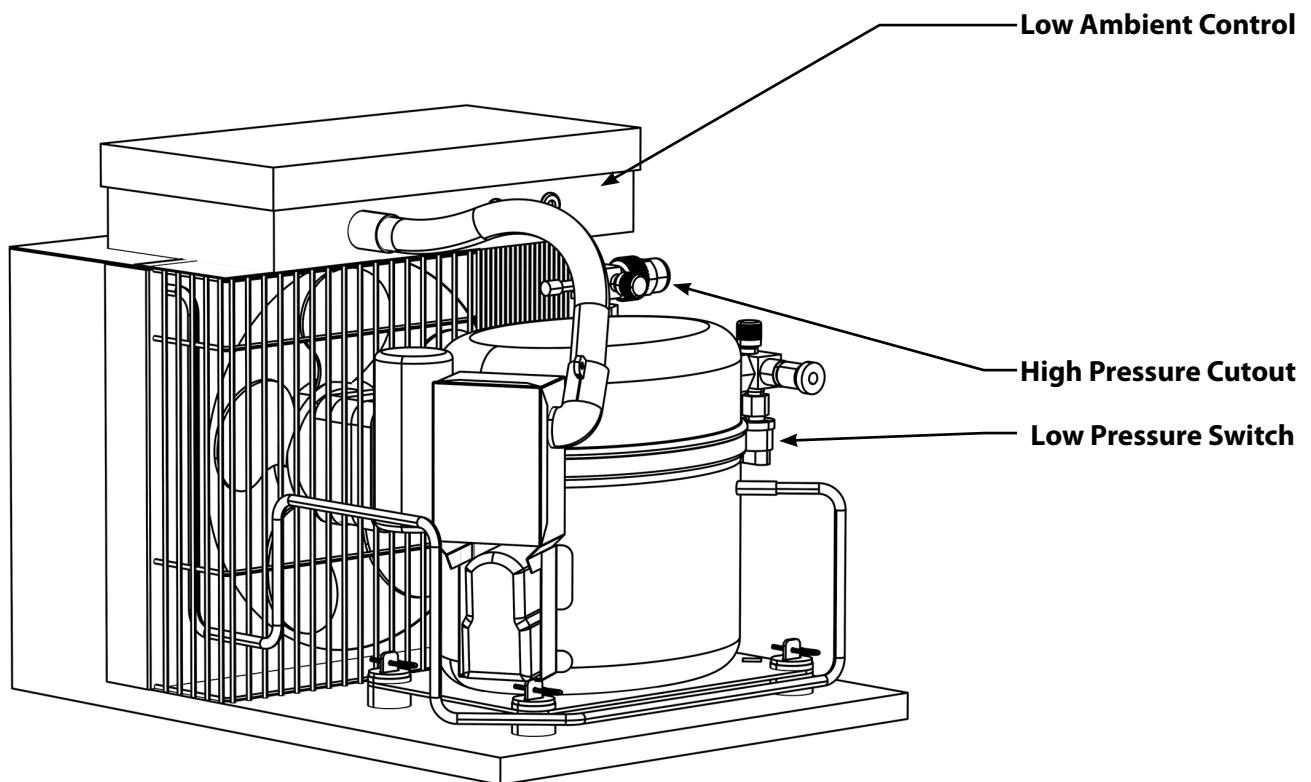
**The Condensing Unit requires a dedicated 115-volt 20-amp circuit.** The unit draws a large inrush current for about one second the instant the compressor starts. With a dedicated circuit and circuit breaker, the condensing unit will have sufficient power for effective operation. (The compressor is controlled by a low pressure switch mounted on the condensing unit. This feature eliminates the need for wiring between the Evaporator Unit (Fan Coil Unit) and the Condensing Unit.)

- Ensure the voltage supplied matches the rating specified on the unit spec label.
- Provide a non GFI dedicated circuit and an appropriate outlet for the Evaporator Unit's (Fan Coil Unit) power cord.
- Provide a dedicated circuit and circuit breaker for the Condensing Unit.
- Provide a weatherproof disconnect for Condensing Units located outside.

As with all sensitive electrical equipment, damage may be caused in the event of power surges and spikes. CellarCool recommends plugging the unit into a surge protector, or power conditioner, in order to protect your system. As outlined in our terms & conditions, power surges and spikes are not covered under warranty.

**WE RECOMMEND THAT YOU DO NOT USE A GROUND FAULT INTERRUPTER (GFI) WITH THIS PRODUCT.**

In case the system should lose power, check the home/main circuit breaker. If the system does not respond properly, refer to the Troubleshooting section on page 40.



For the equipment warranty to be valid, CellarCool requires that the installation is performed by a certified HVAC-R technician (Nate certified technician is recommended) per the specifications outlined in this technician's manual. The technician shall be required to be equipped with the proper tools of the trade including: refrigerant 134a, brazing equipment, dry Nitrogen, an accurate manifold gauge set (digital preferred), plus a four valve manifold set for evacuation, digital micron gauge, digital scale, deep vacuum pump and accurate digital thermometers. Without the proper equipment, a professional job cannot be accomplished. Evidence of the certified tech's NATE# or other certification is required.

# PREPARING THE CONDENSING UNIT (continued)

## Installing the Condensing Unit

The condensing unit can be installed inside a well ventilated area of the home, but it is typically installed outside. Exterior applications will require the use of a protective housing, and the amount of sun exposure should be considered when selecting the placement of the condensing unit. The condensing unit requires a dedicated 20 amp circuit, non-GFI. Make sure there is a minimum three-foot horizontal clearance in front and rear of the unit. The unit may either be hard wired or plug-in depending on local electrical codes.

Set the condensing unit level and with proper clearances in accordance with the instructions, name plate power supplied, proper electric disconnect and fuse protection connected but not turned on and ready for piping connections.

**Inside Condensing Unit Installations:** Inside installations require special consideration, as there must be adequate ventilation to remove the heat created during normal operations. An exhaust port with fan may need to be installed to ensure that heat is effectively removed from the utility room. A return grille or provision for 500 - 600 cfm of cool air to enter the room to replace the exhausted air will accomplish this. Unobstructed airflow to and from the unit is a critical factor in the unit's overall performance. Make sure there is a minimum three-foot horizontal clearance in front and rear of the condensing unit and at least one foot on each side. This will assure that the unit can move the air around the room in an efficient manner.

**Outdoor Condensing Unit Installations.** You must utilize the exterior condensing unit housing for outdoor installations. Place the condensing unit on a solid foundation in a location with adequate ventilation. There should be three feet of clearance in the front and rear of the unit and one foot on each side. The unit should be elevated 18 inches in order to avoid any possible flooding or damage by animals, and should be clear of leaves, dirt, and other debris.

## Head Pressure Control, Fan Cycling Switch:

These switches are used to cycle the condenser fan at low ambient temperature conditions. If your unit is equipped with a Low Ambient Control, set the switch to 170 psig for cut-in and 70 psig for the differential. Further adjustment may be needed. Verify the settings via refrigeration gauge and perform the final adjustments to the readings on the gauge manifold set. If your condensing unit is not equipped with an adjustable Low Ambient Control, it features a pre-set Fan Cycling Switch. These controls serve the same purpose, but have different names.

## Refrigeration Lines

A 1/4 inch O/D copper "liquid line" is required

**It is required to size the suction line tubing according to this chart.**

Model	Line Set Length	<25ft			26-50ft			50-100ft		
	Vertical Rise	<3ft	3-10ft	>10ft	<3ft	3-10ft	>10ft	<3ft	3-10ft	>10ft
WM&FD 3500	Horizontal Tubing	1/2"						5/8"		
	Vertical Rise	3/8"						5/8"	5/8"	1/2"
WM&FD 5000	Horizontal Tubing	1/2"			5/8"					
	Vertical Rise	1/2"								

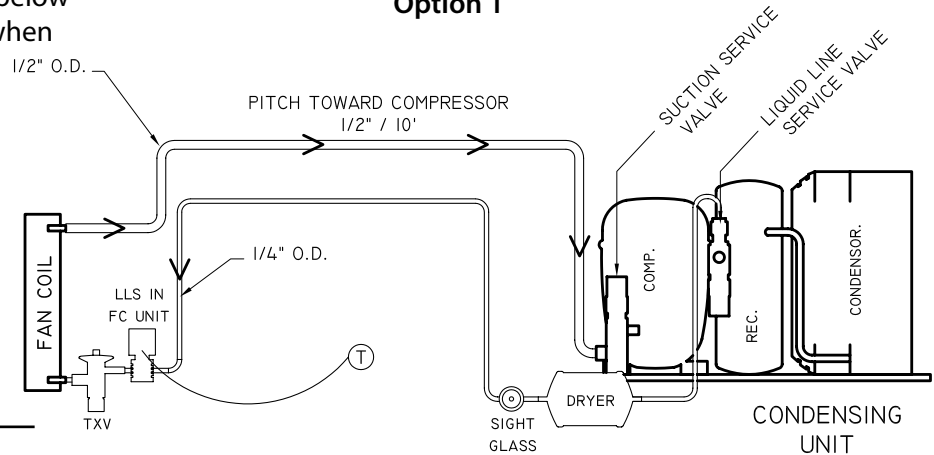
The refrigerant drier and the sight glass shall be installed (in that order) in the direction of the refrigerant flow in the liquid line between the condensing unit and Evaporator Unit (Fan Coil Unit). Enclose the suction line in a cellular insulation 1/2" wall thickness Armaflex (brand name) or equal to reduce heat transfer.

# LINE SET PIPING DIAGRAMS

These are two options for running the line set from the coil to the condensing unit.  
Option 1 is specifically for when the system is installed with the condensing unit below or leveled to the coil. Option 2 is for when the system is installed with the condensing unit at a higher elevation than the coil.

## SINGLE FAN COIL PIPING SYSTEM CONDITION: CONDENSING UNIT BELOW OR CLOSE TO SAME ELEVATION AS FAN COIL UNITS

### Option 1



LEGEND	
LLS	Liquid Line Solenoid
TXV	Thermal Expansion Valve
COMP	Compressor
REC	Receiver
EVAP.	Evaporator
O.D.	Outer Diameter

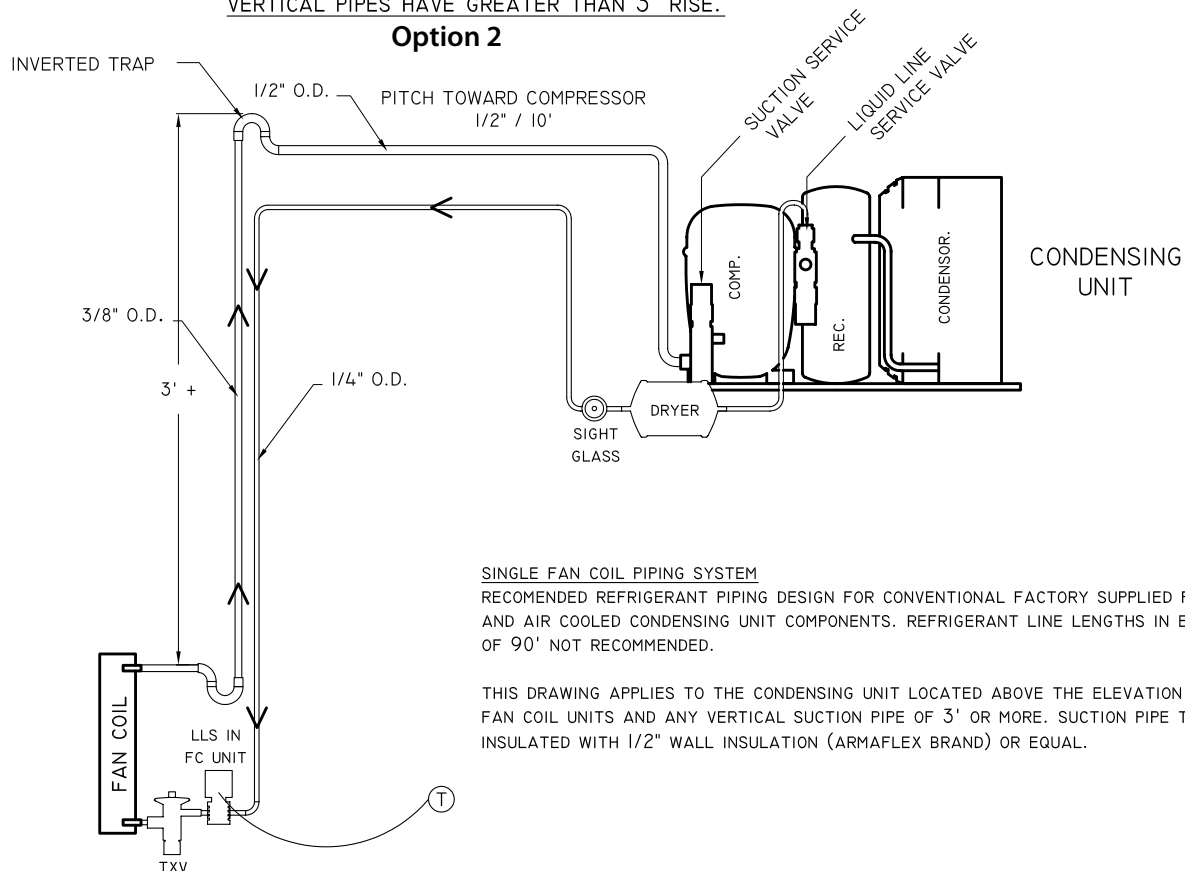
## SINGLE FAN COIL PIPING SYSTEM

RECOMMENDED REFRIGERANT PIPING DESIGN FOR CONVENTIONAL FACTORY SUPPLIED FAN COIL AND AIR COOLED CONDENSING UNIT COMPONENTS. REFRIGERANT LINE LENGTHS IN EXCESS OF 90' NOT RECOMMENDED.

THIS DRAWING APPLIES TO CONDENSING UNIT LOCATION AT OR BELOW THE ELEVATION OF THE FAN COIL UNIT. SUCTION PIPE TO BE INSULATED WITH 1/2" WALL INSULATION (ARMAFLEX BRAND) OR EQUAL.

## SINGLE FAN COIL PIPING SYSTEM CONDITION: CONDENSING UNIT ABOVE FAN COILS AND VERTICAL PIPES HAVE GREATER THAN 3' RISE.

### Option 2



## SINGLE FAN COIL PIPING SYSTEM

RECOMMENDED REFRIGERANT PIPING DESIGN FOR CONVENTIONAL FACTORY SUPPLIED FAN COIL AND AIR COOLED CONDENSING UNIT COMPONENTS. REFRIGERANT LINE LENGTHS IN EXCESS OF 90' NOT RECOMMENDED.

THIS DRAWING APPLIES TO THE CONDENSING UNIT LOCATED ABOVE THE ELEVATION OF THE FAN COIL UNITS AND ANY VERTICAL SUCTION PIPE OF 3' OR MORE. SUCTION PIPE TO BE INSULATED WITH 1/2" WALL INSULATION (ARMAFLEX BRAND) OR EQUAL.

# INSTALLING THE CONDENSING UNIT

## Refrigerant Piping Procedures

When installing/routing the lines set, cap both ends of each tube to prevent material or debris from entering the tubing.

Prior to connecting the piping, loosely connect the refrigerant gauges to the service ports of the suction and liquid line service valves. Purge the charging hoses with dry Nitrogen and tighten the hose connections. Remove the service valve caps and turn the valve stem clockwise (half of a complete turn) in order to unseat the valve and open the service port. The valve comes in a back seated position from the factory. Keep the piping port sealed until ready to connect to the vacuum pump.

Cleanliness is of the utmost importance. All horizontal suction piping should be pitched toward the condensing unit 1/2" for every 10' of pipe. During any brazing procedure, dry Nitrogen should be purged through the fitting at a slow rate to prevent formation of highly abrasive Copper Oxide. Make sure there are no obstructions to the flow which would cause pressure build up and the brazed fittings to leak. After leak testing and confirming there are no leaks, insulate suction line with 1/2" wall thickness Armaflex or equal insulation. Seal all seams using Armaflex 520 Foam Insulation Adhesive or equivalent. Wrap each seam using line set tape.

## Liquid Line Piping Procedure

It is required to use a 1/4" OD Copper tube liquid line. When making connections keep the ends sealed until ready to fit the tube. First connect the supplied refrigerant drier close to the liquid service valve (king valve) on the receiver. Downstream, connect the moisture indicating sight glass in an easily visible location. Run the tubing to the Evaporator Unit (Fan Coil Unit) location and fit to the liquid line stub from the Evaporator Unit (Fan Coil Unit). Energize the Evaporator Unit (Fan Coil Unit) and set the temperature controller to call for cooling, this will activate the liquid line solenoid valve. Uncap the suction pipe to prevent obstructed Nitrogen flow. Open the Nitrogen to allow a slow flow and braze the liquid line fitting. Shut off the Nitrogen and power until suction line is brazed.

## Suction Piping Procedure

Slide Aramaflex insulation over the tubing for the entire length of the tube and keep the end of tube sealed during this procedure. Keep the tubing sealed while running the connection points and fit the suction tube to the Evaporator Unit (Fan Coil Unit) outlet connection. Install a Schrader Type Access valve at the outlet of the Evaporator Unit (Fan Coil Unit) to allow for superheat checking. If there are brazed fittings along the length of the tube, apply the insulation after leak testing.

After all piping ran and ready for the brazing process: Energize the Evaporator Unit (Fan Coil Unit) and set the temperature controller to call for cooling. Open the liquid line service valve and bleed the nitrogen through both the liquid and suction line. Loosen the suction gauge hose to relieve pressure during the brazing process. Braze the connections and cool them off quickly. With the solenoid valve still energized, connect the refrigerant cylinder and add a small amount of 134a to both the high and low sides.

## Testing the Low Ambient Control and Leak Testing

Verify the Johnson control is set at 170 for the cut in and 70 for the differential. Remove one wire from the Johnson Pressure Control and connect an ohmmeter to its two terminals. With pressure below 100 psi, the meter should read "open circuit". Using dry nitrogen slowly increase pressure to 170 psi at which pressure the controller should make and the meter will read "continuity".

Continue pressure build up to 200 psi. Check to see if there is a noticeable pressure drop, if so locate and fix leak. With pressure at 200 psi, check for leaks with a refrigerant leak detector and/or soap bubbles. Confirm pressure holds at 200 psi for 30 minutes. If not check again for leaks and repair, perform another leak test. When it is confirmed there are no leaks, release the nitrogen pressure and leave the solenoid valve energized.



# INSTALLING THE CONDENSING UNIT

## Evacuation

Connect evacuation type four valve gauge manifold to high and low pressure service valve ports on the condensing unit with the valve stems mid seated as when leak testing. Install service caps on valves and tighten them. Energize the liquid line solenoid valve (make sure there is fresh oil in the vacuum pump). Connect a micron gauge directly to the pump, blank off and start the pump to verify that it is capable of 200 micron vacuum and the gauge is capable of reading that vacuum. Connect the micron gauge to the access valve installed in the suction line at the Evaporator Unit (Fan Coil Unit). Remove the Schrader valve depressors from the gauge hoses to reduce restriction and connect gauges to the suction and liquid line service valve service ports on the condensing unit. Connect the pump to the 3/8" hose on the manifold set, start the pump and run until the micron gauge reads 200 microns.

When a 200 micron level evacuation is achieved, break the vacuum with R-134a and add enough refrigerant to pressurize the system with a few psi of positive pressure.

## Charging

Remove the vacuum pump and the micron gauge. Install a spare low pressure gauge to the access valve at the Evaporator Unit (Fan Coil Unit). With the power off to the condensing unit, place the cylinder of R134a on a digital scale. Admit liquid refrigerant to the system through the high pressure side, (Liquid line service valve) until the refrigerant stops flowing or until about three pounds have been added. Shut off refrigerant flow to system.

Verify that the set point on the controller is low enough to allow the system to run continuously for 30 minutes or more. Turn on power to the condensing unit and the compressor should start if suction pressure is above 6 psi. If the system pumps down and the compressor shuts off, set the 5 minute time delay relay time to the lowest setting to avoid having to wait. Add refrigerant as a vapor through the low pressure side of the system (suction service valve port).

Observe the sight glass when the compressor starts. If bubbles are present, slowly add more refrigerant in vapor form to the low side. The suction pressure and head pressure should increase as the sight glass clears. Check the superheat during the charging process. If the superheat drops to 4 or 5 degrees Fahrenheit and sight glass still has bubbles, let the unit run until the wine cellar temperature drops and approaches 55 degrees Fahrenheit. Observe the sight glass, if bubbles are present add additional refrigerant in small increments. Let the system stabilize for about 5 minutes and check the sight glass for bubbles before adding additional refrigerant. Once the sight glass is clear, check the superheat at the outlet of the Evaporator Unit (Fan Coil Unit) (evaporator superheat should be between 8-12 degrees Fahrenheit). If superheat is not between 8 and 12 degrees make an adjustment to the expansion valve. Depending temperature, the "high side" should be approximately 175lbs, and the "low side" should be 28lbs or more to keep the Evaporator Unit (Fan Coil Unit) from icing.

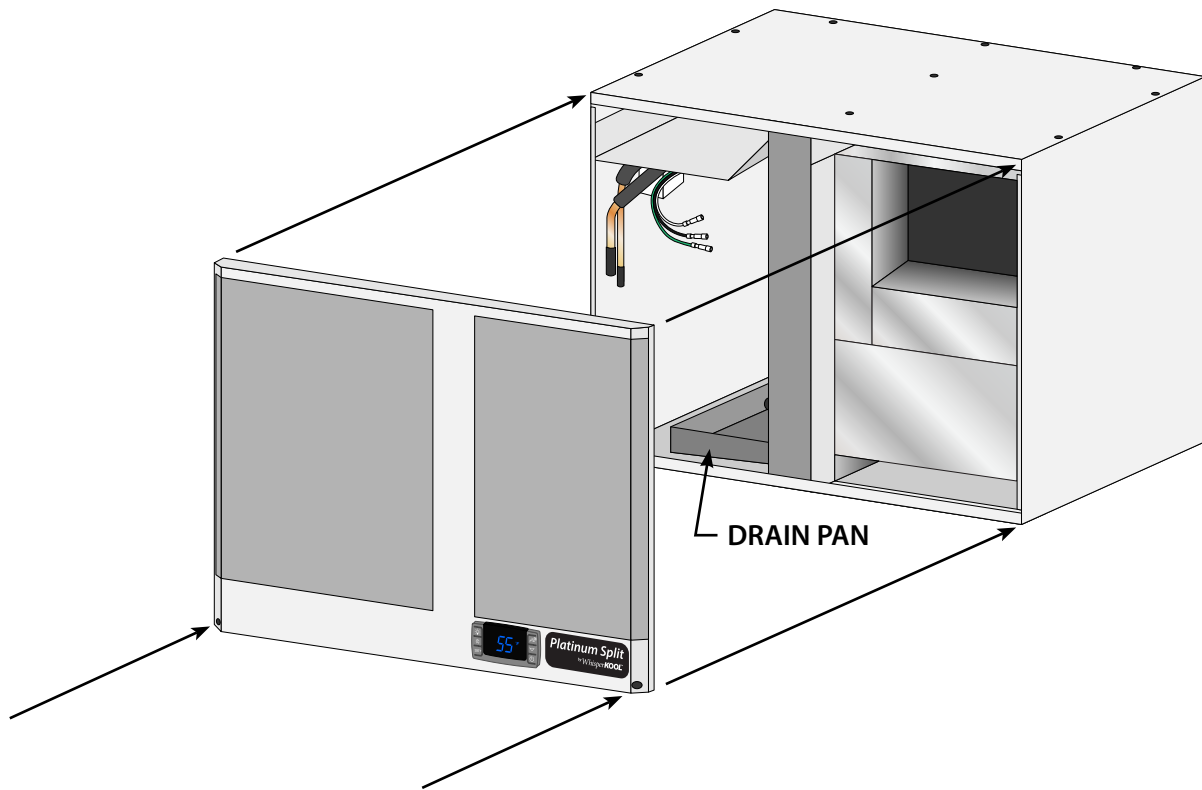
## INSTALLING THE CONDENSING UNIT (continued)

### **Measure Superheat**

If superheat is high and bubbles are present, add more refrigerant until it is clear. If superheat is low (around 4-6 degrees Fahrenheit) and bubbles are present in the sight glass, check for liquid refrigerant entering the compressor as evidenced by cool crankcase below 100- 110 degrees Fahrenheit and low discharge superheat. Adjust TXV setting in small increments to increase superheat and stop liquid from going to the compressor. Check this before adding more refrigerant. If the temperature of the air entering the condenser is cold enough to cause the condenser fan to cycle, block about 60% of the coil to raise the head pressure and allow time for stabilization. Reduce blockage if the condensing temp is above 115 degrees Fahrenheit. Retain blockage if necessary to maintain stability for performance test listed in the Split System Warranty Checklist. If the air is cold, below 60 degrees Fahrenheit entering the condenser and the sight glass is clear; allow the system to run for a while until the cellar cools off, then measure and record data on the Split System Warranty Checklist.

## INSTALLING THE WALL MOUNT KIT

1. If removed, re-install the top onto the unit.
2. Connect the red wire from the display adapter to the upper (+) terminal on the display located on the front grille
3. Connect the black wire from the display adapter to the lower (-) terminal on the display
4. Align the front grill with the 4 ball studs on the housing. Push the front grill onto the balls studs until it snaps into place.
5. Using a Phillips head screwdriver, fasten the bottom two screws to fasten the grille to the unit



## INSTALLING THE DUCT PLENUM

1. If removed, re-install the top onto the unit.
2. Align duct plenum with the 4 ball studs on the housing. Push the duct plenum onto the balls studs until it snaps into place.
3. Using a Phillips head screwdriver, fasten the bottom two screws to fasten the plenum to the unit
4. Connect the supply and return duct work to the unit
5. Using duct tape or foil tape, seal the seam between the plenum and unit
6. Insulate all exposed metal on the unit to prevent surface condensation

**NOTE:** A 12"x12" return air filter grille must be installed to prevent contaminants from entering the cooling system.

# SYSTEM OPERATION

## Initial Start-Up

When power is applied to the unit, the control will briefly display all symbols, and the Snow Flake symbol will be displayed (if unit is calling for cooling). There may be a brief delay prior to the evaporator fan turning on, as the fan will not turn on until the evaporator probe temperature drops below 70°F. When the evaporator fan is activated the Fan symbol will be displayed. The temperature control feature for the evaporator fan is a feature applicable to CellarCool. This is the Advance Product Safety Technology (APST), which ensures that in the possible event of a cooling deficiency, the heat from the indoor fan will not raise the temperature of the wine cellar, which could otherwise have an adverse effect on the wine aging process.

## Normal System Cycle

After the Air Sensing probe has reached the set point (all units are shipped with the set point of 55°F and a differential of 1°F), the compressor and the condenser fan will turn off, but the indoor fan will continue to run for about 5 minutes, which is a feature of the CellarCool Humidity Management (WHM) system. The WHM is an adjustable feature which allows the customer the convenience of managing the humidity enhancement of their wine cellar. The WHM is one of the many Customer Preference Selection features which allow the customer the ability to fine tune the controls.

## Anti Short Cycle

The Anti Short Cycle ensures that the unit will remain off for a period of 5 minutes after the unit has reached the set point to prevent short cycling of the compressor.

## Anti Frost Cycle

The Anti Frost Cycle is a precautionary measure, as icing or frosting of the coil does not occur during normal operation. The system will go through a defrost cycle every 4 hours. During the defrost cycle, the indoor fan will provide air flow across the indoor coil, which will evaporate any frost accumulation.

## Low Ambient Conditions

If the condensing unit is installed outside (which will allow the condenser to be exposed to low ambient temperatures), the condenser fan may cycle on and off. The purpose of the fan cycling is to maintain the system high side pressure, which will ensure an adequate refrigeration process.

## Air Sensing Probe Failure Protection

In the event that a Air Sensing probe should fail, the APST (Advance Product Safety Technology) will automatically transition the Refrigeration Compressor cycles to a pre-determined time series (based on detailed laboratory testing), which will ensure that the product is kept within the safe range.

## Remote Control Panel (standard on ducted units)






The remote keypad is designed to give the user the ability to monitor and change cellar conditions when the evaporating unit is placed in a remote location outside of the cellar.


# CONTROLLER FUNCTIONS

If your unit has a remote keypad then you will have the Remote Controller.



## TEMPERATURE

Button	Normal Functions
<b>ON/OFF</b> 	<ul style="list-style-type: none"> <li>The ON/OFF button allows the customer the convenience of turning the refrigeration system ON or OFF, from the control panel. This feature does not disconnect power from the unit. In order for the power to be shut off from the unit, the power cord must be unplugged from the wall receptacle.</li> <li>Press the ON/OFF button once for button application.</li> </ul>
<b>Up and Down Arrows</b>  	<ul style="list-style-type: none"> <li>Use these buttons to scroll up or down the CPSM (Customer Preference Selection Mode) menu.</li> <li>Displays the Highest and Lowest temperature sensed by the Air Sensing Probe. This feature allows the customer instant access to the recorded data applicable to the Air Sensing Probe Temperatures, it can be easily reset to reflect current temperatures.</li> </ul> <ol style="list-style-type: none"> <li>Press the "UP" arrow, or the "Down" arrow once, and the Highest or Lowest Temperature (Hi/Lo) sensed by the Air Sensing Probe, will be displayed.</li> <li>To reset the Hi/Lo, press and hold the "Set" button when the Hi/Lo value is displayed on the Digital Display. Continue to hold the "Set" button until "rst" appears on the digital display and then blinks. This will erase the past recorded "Temperature Data History" and start recording, from the current time and temperature, forward. Temperatures displayed would reflect Air Sensing Probe Temperatures from that point in time, and beyond.</li> <li>The Hi/Lo feature should be reset at initial "Start-Up" and after the Cellar or Cabinet has obtained normal operating temperatures, which is generally 55°F.</li> </ol>
<b>Cellar PreChill (CPC)</b>  	<p>The CPC Feature is activated by pressing the Up button for 3-5 seconds, and the CPC logo will be displayed on the digital display. The CPC feature can be terminated by pressing the Up button for 3-5 seconds, or the feature will self terminate after 6 hrs.</p> <ol style="list-style-type: none"> <li>The (CPC) Feature may be used to Pre-Chill the Cellar prior to loading it with Warm Product. The feature will shift the Set Point down to a lower setting of 52°F, for the next 6 hours. After the 6 hour time period, the Set Point will automatically return to the original Set Point.</li> <li>The CPC feature can be conveniently adjusted to the customer's specific needs, by accessing the "Customer Preference Select Mode" (CPSM). See Customer Preference Select Mode Instructions.</li> </ol>

<p><b>SET</b></p>	<p><b>Set</b></p> <ol style="list-style-type: none"> <li>1. Press the "Set" button once and it will display the Set Point. After approximately 5 seconds, the display will return to normal operation and display the Air Sensing probe temperature.</li> <li>2. Press the "Set" button once and it will display the Set Point. Press the up and down arrows to change the set point. Press the Set button again and the numbers will blink, confirming the change in Set Point.</li> <li>3. Press and hold the "Set" button during the display of the Hi/Low "Temperature Data History" (hold button unit "rst" blinks on display), and it will erase the past recorded data file and start recording, from the current time and temperature.</li> <li>4. Press the "Set" and the "Down Arrow" buttons simultaneously, for <b>3-5 seconds</b>, and you will access the "Customer Preference Selection Mode" (CPSM). The CPSM allows the customer to "Fine Tune" the Control Operating System to their applicable choice.</li> </ol>
<p><b>Alarm</b></p> 	<p>The Alarm symbol is shown when the unit encounters an issue that needs attention, the displayed alarm codes are explained below.</p>

### Alarm Codes

Message	Cause	Solution
"P1"	Faulty Air Sensing probe Connection	1. Check Air Sensing Probe connection at green terminal block on controller.
	Defective Air Sensing probe	Replace the Air Sensing probe
"P2"	Faulty Evaporator Probe Connection	Check Evaporator Probe connection at green terminal block on controller
	Defective Evaporator Probe	Replace the Evaporator Probe
"HA"	Defective Air Sensing probe	Replace the Air Sensing probe
"LA"	The Air Sensing probe is sensing a temperature of 10° below the set point	Allow the room to warm up which will increase the temperature of the wine
	Defective Air Sensing probe	Replace the Air Sensing probe
"POF"	The keypad is locked	Hold "Up" and "Down" buttons for 3 to 5 seconds to disable, "PON" should appear

<p><b>CPSM Mode</b></p>	<p>Press the “Set” and the “Down Arrow” buttons simultaneously, for <b>3-5 seconds</b>, and you will access the “Customer Preference Selection Mode” (CPSM). The CPSM allows the customer to “Fine Tune” the Control Operating System to their applicable choice.</p> <p>The following CPSM options are available for adjustment:</p> <p>Fon – Humidity Management Enhancement: This parameter is normally set at 0, which should provide adequate relative humidity for the cellar.</p> <ul style="list-style-type: none"> <li>• An increase in this parameter will increase the Humidity Enhancement (%RH), and a decrease in the parameter will decrease Humidity Enhancement (%RH).</li> <li>• Adjustments should be made in increments of 5, with a maximum of 15, and a minimum of 0.</li> <li>• After any adjustment to Humidity Enhancement, <b>you should wait a minimum of three days</b> before making any additional adjustments. This will allow the cellar sufficient time to acclimate to the new setting.</li> </ul> <p>Fof - Humidity Management Enhancement: This parameter is normally set at 15. This parameter should not be adjusted, as it simply provides an OFF cycle time for the fan, during the compressor OFF cycle. However, the parameter is located within the CPSM as a convenience to the customer, should it need to be adjusted. CCT - Cellar Pre-Chill Duration: This parameter is set to 6 hours, but can be changed between 0-23.5 hours.</p> <p>Con/Cof – Compressor On time (Con) and Off time (Cof) with a Probe 1 failure/Alarm. These parameters are set at Con 40 min/Cof 10 min. In the event that there is a Probe 1 failure/ Alarm, the compressor/refrigeration system automatically starts a predetermined ON/OFF cycle, which is controlled by the Con and the Cof parameters. The customer can adjust these parameters to maintain the desired Air temperature.</p>
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## MAINTENANCE SCHEDULE

<b>Monthly</b>	<b>1. Check coils 2. Check for unusual noise or vibration 3. Check the drain line to see if it is above the waterline if draining into a vessel.</b>
<b>Quarterly</b>	<b>1. Use a vacuum with brush attachment to clean coils. Be careful not to crush coil fins when cleaning.</b>
<b>Annually</b>	<b>1. Inspect for corrosion. 2. Check wiring connections and integrity of cords. 3. Pour a 50/50 bleach solution into the drain line every spring.</b>

# TROUBLESHOOTING GUIDE

## Unit has ice forming on the Evaporator Unit (Fan Coil Unit)

Possible Cause	Solution
Evaporator filter or coil is dirty.	Remove the filter and wash, then clean the coil with a vacuum. If coil is very dirty, use a spray bottle with a small amount of liquid dish washing detergent or coil cleaner. Spray coil, let set for 5 min, then flush with fresh water.
There is something blocking the supply and or return air	Remove blockage
The evaporator fan is not turning on.	Call a service tech to troubleshoot
The Evaporator Unit (Fan Coil Unit) has not gone through its anti-frost sequence, yet.	Check for ice in the depth of the coil. Melt with blow drier until coil is warm to the touch. Soak up water with a towel.
If Evaporator Unit (Fan Coil Unit) continues to ice.	Observe ice formation pattern. If only part way up the coil face, the system could be low on refrigerant. If all the way up, the coil may be dirty or airflow is blocked.

## Unit does not run/power up

Possible Cause	Solution
Evaporator Unit (Fan Coil Unit) is not plugged in	Make sure the unit is plugged into an outlet
Power switch not on	Turn unit on by pressing the power button on the control
Line voltage is incorrect rating for the system	Check line voltage to make sure there is 110v/120v
at set point	Lower set point
Thermostat not calling for cooling	Lower set point
Faulty thermostat or wiring	Call Customer Service at 1-800-343-9463

## Cellar Temperature is too Warm

Possible Cause	Solution
The temperature or the room condensing unit is exhausting to has exceeded 110°F	Intake temperature needs to drop below 85°.
The system is undersized for the cellar.	Order correct size system
There is something blocking the supply and/or return air, on the Evaporator Unit (Fan Coil Unit) or the Condensing Unit.	Remove air flow obstruction
Evaporator Unit (Fan Coil Unit) is mounted too low in the cellar	Re-locate unit so the distance from the ceiling and top of the unit is no more than 18"
One or more of the fans are not turning on.	Please contact the installing technician to troubleshoot.
Compressor is not turning on.	Please contact the installing technician to troubleshoot.
Compressor keeps cycling on overload	Make sure all fans are working and there are no airflow obstruction.
Poor seal around door or other areas requiring a seal (around the unit, wall joints, etc)	Make sure there are no air gaps around the door. If door seal is damaged, replace it.
Controller set too high	Lower the set point.
Evaporator coil is frosted or iced up	Observe ice formation pattern. If only part way up the coil face, Evaporator Unit (Fan Coil Unit) could be low on refrigerant. If so, contact your installing technician to assist with troubleshooting.

## System Runs Constantly

Possible Cause	Solution
Leaky door seal or poorly insulated cellar.	Fix leaky door seal and insulate cellar in accordance with this manual. (Page 8)

# TROUBLESHOOTING GUIDE

Unit leaks water	
Possible Cause	Solution
Evaporator Unit (Fan Coil Unit) is not level	Evaporator Unit (Fan Coil Unit) should be level on the wall to prevent leaking.
Drain line clogged or kinked	Check drain line to make sure water can flow freely.
Drain is clogged preventing water from escaping	Disconnect drain and clear out, open access door and check drain for blockage
Drain line does not have a downward slope	Fix Drain line so there is a downward slope from the unit to the drain.
Coil is iced causing drain pan ice and water overflowing	Melt ice with blow drier. Soak up with a towel
Unit runs but does not cool	
Possible Cause	Solution
Lack of air flow	Make sure fan is unobstructed; Make sure the evaporator filter, evaporator coil, and condenser coil are clean and free of debris.
System undersized	Contact Customer Service at 800-343-9463
Compressor is overheating	Shut system off for 1 hour to allow compressor to cool. Turn back on and check for cooler air flow out. If compressor runs, check for and clean condenser coil as possible cause of compressor overheating. If problem repeats, contact your installing technician to assist with troubleshooting.
Evaporator fan runs but compressor does not	
Possible Cause	Solution
Running an Anti-Frost Cycle	1) If the system is maintaining the correct cellar temperature and there is a dripping snowflake symbol illuminated on the control, the system is going through an anti frost cycle. No action Required. 2) If the system is not maintaining the correct cellar temperature this may be caused by a dirty evaporator filter or coil. 3) Call installing technician to troubleshoot as the system may be low on charge or an adjustment to the TXV.
Compressor and/or starting components faulty	Please contact the installing technician to troubleshoot.
System may be performing the WHM function	Allow cooling system to revert back to cooling mode.
Compressor may have overheated.	Shut system off for 1 hour to allow compressor to cool. Turn back on and check for cooler air flow out. If compressor runs, check for and clean condenser coil as possible cause of compressor overheating. If problem repeats, contact your installing technician to assist with troubleshooting.
Compressor runs but evaporator fan does not	
Possible Cause	Solution
Faulty fan motor	Please contact the installing technician to troubleshoot.
Faulty Controller	Please contact the installing technician to troubleshoot.
Compressor short cycles	
Possible Cause	Solution
System low on refrigerant charge	Please contact the installing technician to troubleshoot.
Condensing fan motor/capacitor faulty	Please contact the installing technician to troubleshoot.
Compressor and /or starting components faulty	Please contact the installing technician to troubleshoot.
Humidity in cellar too low	
Possible Cause	Solution
Not enough moisture	Raise the Fon setting to increase the humidity level

# BYPASS TEST PROCEDURE

**NOTE:** If instructed by a CellarCool representative, follow the directions below to test the cooling unit using the bypass plug provided in the accessory kit.

1. Disconnect power from the evaporator unit
2. Loosen the two screws on the front of the grille or duct plenum
3. Pull the grill or duct plenum away from the evaporator unit
4. Remove the screw securing the control panel in place
5. Slide the control panel down, out of the evaporator housing. The control panel has two hooks which allow it to attach to the evaporator unit for easy serviceability.
6. Disconnect the Molex connector labeled #4.
7. Locate the bypass plug included in the accessory kit.
8. Plug the bypass plug into the male Molex connector.
9. Connect power to the evaporator unit. The unit should immediately turn on. If all the components are not operational, disconnect power immediately and contact customer service. If all components seem to be operating correctly, allow the unit to run for 4 hours. Monitor the temperature of the cellar to determine if the unit is cooling properly.
10. Once the test is complete, remove the bypass plug. Plug the Molex connector back in to the unit's wiring.
11. Replace the control and faceplate.

## NOTES

# TECHNICAL ASSISTANCE

CellarCool Customer Service is available Monday through Friday from 8:00 a.m. to 4:00 p.m. Pacific Time.

The customer service representative will be able to assist you with your questions and warranty information more effectively if you provide them with the following:

- The model and serial number of your CellarCool systems.
- Location of unit and installation details, such as ventilation, ducting, construction of your wine cellar, and room size. Photos of the cellar and installation location may be needed.

## Contact CellarCool Customer Service

1738 E. Alpine Ave  
Stockton, CA 95205  
[www.CellarCool.com](http://www.CellarCool.com)  
Email: [support@cellarcool.com](mailto:support@cellarcool.com)  
Phone: (209) 466-9463  
US Toll Free 1(855) 235-5271  
Fax (209) 466-4606

# ACCESSORIES FOR COOLING UNITS

**CellarCool offers accessories to enhance and customize your wine cooling unit.**

## Exterior Grille

Protects the evaporator unit from the weather elements when placed on the exhaust side.

## Condensate Pump Kit

The condensate pump kit is designed as an automatic condensate removal pump for water dripping out of our evaporator units' drain line. The pump is controlled by a float/switch mechanism that turns the pump on when approximately 2-1/4" of water collects in the tank, and automatically switches off when the tank drains to approximately 1-1/4". The condensate pump kit allows the excess condensate to be pumped up to 20ft away from the unit.

## Ducting Kit

This kit allows the exhaust side of the unit to be ducted to an area (most cases outside) that the additional heat will not matter.

**Accessories can be purchased at [www.cellarcool.com](http://www.cellarcool.com)**

# CELLARCOOL

## Split System Series Product Warranty Information

### CellarCool Product Terms and Conditions Including Product Limited Warranty And Product Installation Requirements For CellarCool Split System Series

ATTENTION: PLEASE READ THESE TERMS OF USE CAREFULLY BEFORE INSTALLING YOUR CELLARCOOL COOLING SYSTEM. INSTALLING YOUR CELLARCOOL COOLING SYSTEM INDICATES THAT YOU ACCEPT AND AGREE TO EACH OF THE TERMS AND CONDITIONS SET FORTH HEREIN ("TERMS OF USE"). IF YOU DO NOT ACCEPT THESE TERMS OF USE, YOU RISK VOIDING YOUR WARRANTY AND ASSUMING ADDITIONAL REPAIR AND REPLACEMENT COSTS.

**1. Purchase of a CellarCool Cooling System assumes that the Purchaser ("End User") fully accepts and agrees to the Terms and Conditions set forth in this document. The Terms and Conditions of Sale and Owner's Manual are shipped with each unit and, if another copy is needed, replacement copies can be downloaded from the company website (cellarcool.com) or by contacting CellarCool directly for a new copy. CellarCool reserves the right, in its sole discretion, to change its Terms and Conditions at any time, for any reason, without notice.**

#### **2. CellarCool Product Installation and Limited Warranty**

- A. Purchaser of the product must arrange for the product to be installed by a certified HVAC/R technician in accordance with procedures set forth by CellarCool and described in the CellarCool Owner's Manual.
- B. The HVAC/R technician installing the product must complete the designated portion of the Split Startup Checklist and provide licensing or certification identification number information to assist in the warranty registration process.
- C. Purchaser must return the completed Split Startup Checklist to CellarCool within thirty (30) days of installation of Product. The Split Startup Checklist must be approved by CellarCool to activate the Limited Warranty. If the Split Startup Checklist is approved, Purchaser will be sent activation approval documents and will start receiving the benefits of the Limited Warranty throughout the warranty period. If the Split Startup Checklist is incomplete, Purchaser will be informed they have five days to complete the Split Startup Checklist and re-submit to CellarCool. The Split Startup Checklist will be reviewed again, and if denied, Purchaser will be informed that they have 10 business days for corrective action. Failure to register the Product may result in loss of warranty.
- D. Purchaser is responsible for the full costs of installation and any additional parts required for the proper and complete installation of the product.
- E. For Split Systems returned to CellarCool in accordance with the terms and conditions of the Limited Warranty, CellarCool warrants against defects in material and workmanship as follows:
  - 1. LABOR** - For a period of two (2) years commencing on the date of purchase, CellarCool will, at its option and discretion, reimburse up to \$250 to the End User for cost incurred for servicing, repairing, removing or installing warranty parts. Invoice for service must be forwarded to CellarCool for assessment and processing. The Split System warranty is invalid if there is attempted repair by anyone other than an HVAC/R technician approved by CellarCool to service the Product.
  - 2. PARTS** - For a period of two (2) years commencing on the date of purchase, CellarCool will supply, at no charge, new or rebuilt replacement parts in exchange for defective parts. Replacement parts are warranted only for the remainder of the original warranty period.
  - 3. FREIGHT** - For a period of two (2) years commencing on the date of purchase, if after CellarCool approved evaluation the original Product failure is determined to be the cause of a manufacturers defect, and not the cause of an installation error or other cause, CellarCool will cover at its option, freight for the replacement parts or Product.

The following part or cause of failure is not the responsibility of CellarCool:

- Improper voltage supply
- Line set with screw connectors (high end and low end)
- Leaks found at the braze points when performing pressure check
- Unit that has been charged incorrectly
- Incorrect tubing diameter used on line set
- A unit that has been wired incorrectly
- Valve stem on condenser side
- Improper installation of P-Trap
- Lack of P-Trap (if required)
- Condensers that are installed outdoors or in elements that would affect operation without proper cover or housing. (Housing is available from Manufacturer).

#### Product Warranty Limitations and Exclusions.

1. This limited warranty does not cover cosmetic damage caused during installation, damage due to acts of God, commercial use, accident, misuse, abuse, negligence, or modification to any part of the Product. Delivery and installation of the Product, any additional parts required, as well as removal of the Product if warranty work is required, are all at the sole cost, risk and obligation of the End User.
2. This limited warranty does not cover damage due to improper installation or operation or lack of proper maintenance of the Product, connection of the Product to improper voltage supply, or attempted repair of the Product by anyone other than a technician approved by CellarCool to service the Product.
3. This limited warranty does not cover any Product sold "AS IS" or "WITH ALL FAULTS."
4. Product that has been replaced during warranty period does not extend the warranty period past the original date of purchase.
5. This limited warranty is valid only in the continental United States. Sales elsewhere are excluded from this warranty.
6. Proof of purchase of the Product in the form of a bill of sale, receipted invoice or serial number, which is evidence that the Product is within the Limited Warranty Period, must be presented by the End User to CellarCool in order to obtain limited warranty service.
7. This limited warranty is void if the factory applied serial number has been altered or removed from the Product.
8. This limited warranty is voided if installed in an enclosure of insufficient design that does not follow the Product installation requirements stated herein and in the owner's manual.
9. Removing the rivets from the Product's unit housing without prior authorization from CellarCool voids this limited warranty.
10. The End User must first contact CellarCool Customer Service by telephone (at 1-800-343-9463) prior to attempting service on any Product still under the limited warranty; else the limited warranty is voided.
11. 11. This limited warranty does not cover Product being concealed by, but not limited to, vegetation, fabric, shelving, mud, snow, or dirt. Product must not be painted or limited warranty will be void.
12. This limited warranty does not cover exposure to corroding environments such as, but not limited to, petroleum and gasoline products, cleaning solvents, caustic pool chemicals, and marine air.
13. This limited warranty does not cover any cause not relating to Product defect.
14. THE REPAIR OR REPLACEMENT OF THE PRODUCT AS PROVIDED UNDER THIS LIMITED WARRANTY IS THE EXCLUSIVE REMEDY OF YOU, THE END USER, AS WELL AS ANYONE ELSE IN THE CHAIN OF TITLE OF THE PRODUCT, DOES NOT START A NEW LIMITED WARRANTY TIME PERIOD, AND IS IN LIEU OF ALL OTHER WARRANTIES (EXPRESS OR IMPLIED) WITH REGARD TO THE PRODUCT. IN NO EVENT SHALL CELLARCOOL BE LIABLE FOR INCIDENTAL, CONSEQUENTIAL, SPECIAL OR CONTINGENT DAMAGES FOR BREACH OF ANY EXPRESS OR IMPLIED WARRANTY ON THIS PRODUCT. THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXPRESSLY DISCLAIMED. Some states do not



1. allow the exclusion or limitation of incidental or consequential damages, or allow limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you. This limited warranty gives you specific legal rights, and you may have other rights, which vary from state to state.
2. Failure of the End User to comply with all of the Product Installation Requirements, Maintenance Requirements and End User Requirements may, at CellarCool's sole discretion, void this limited warranty.
3. No one has any authority to add to or vary the limited warranty on this Product.

### **3. Maintenance Requirements**

The End User is responsible for checking the coils on the condenser unit and vacuuming them every three months to maintain them free of debris. It is the End User's responsibility to clean off any accumulated dust, lint, or other debris from the front and rear intake grills; failure to do this on a regular basis will restrict the airflow and may affect the Product's ability to function properly. Periodically cleaning the Product's vents will help assure maximum cooling efficiency. The drain tube must also be checked and kept clean and free of debris and mold to maintain proper performance.

Mold is a natural living organism in the environment. It exists in the air in the form of microscopic spores that move in and out of buildings through doors, windows, vents, HVAC systems and anywhere else that air enters. Once it is discovered, mold must be addressed quickly and appropriately. Delayed or improper treatment of mold issues can result in costly and reoccurring repairs. If the End User suspects a mold problem, it is always best to hire a qualified and experienced mold remediation specialist.

### **4. Additional End User Costs And Responsibilities**

Terms and conditions for replacing the Product that is being evaluated for limited warranty.

1. After evaluation by a certified HVAC/R technician and the Product is found to be un-repairable in the field, contact CellarCool Customer Service to arrange for replacement under the warranty guidelines. When a claim for warranty is submitted for a condenser skid, the End User must purchase a new condenser skid from CellarCool at retail price. Upon installation of the new condenser skid by a certified HVAC/R Technician, the HVAC/R Technician must complete the Installation Checklist and End User must submit the Installation Checklist to CellarCool Customer Service for approval. The original condenser skid must be returned within 21 days to CellarCool for failure analysis. If the Installation Checklist is approved and the failure is evaluated as defective and not installation error or other reason, the End User will be refunded for the cost of the replacement skid.
2. If the Product failure is evaluated and it is determined that it is an installation error or other reason, all costs, including shipping will be the responsibility of the End User.

The following items are not covered under any warranty and are the sole responsibility of the End User:

- A. End Users should satisfy themselves that the Product they are purchasing is suitable for their particular needs and requirements, and thus no responsibility will be placed with CellarCool for the End User's decisions in this regard.
- B. End Users must assure that the product is installed by a certified HVAC/R technician. Failure to do so will result in Voiding the Limited Warranty.
- C. It is the End User's responsibility to secure safe haven/storage for ANY AND ALL items that are being kept and stored in the End User's wine cellar, including any Product. CellarCool takes no responsibility for the safety and preservation of the aforementioned items in the event that the environment becomes unsuitable to maintain a proper storage environment.
- D. End User is responsible for initial installation costs, including, but not limited to, labor costs and the cost of any additional parts necessary to complete the installation.
- E. End User is responsible for all costs incurred for the installation and/or removal of the Product, or any part thereof, unless such cost has been agreed by CellarCool to be a warranty repair prior to the work being performed.

### **5. Sales and Use Tax**

CellarCool only collects California sales tax for orders shipped within the State of California; CellarCool does not collect sales tax for orders shipped to other states. However, the Purchaser and the End User may be liable to the taxing authority in their state for sales tax and/or use tax on the Product. The Purchaser and the End User should each check with their state's taxing authority for sales and use tax regulations.

## **6. Customer Service and Troubleshooting**

CellarCool's customer service department is available to answer any questions or inquiries for End Users regarding a CellarCool Product, as well as to assist in performing basic troubleshooting, Monday through Friday, from 6:30 a.m. to 4:00 p.m. PST, at telephone number 1-800-343-9463. CellarCool reserves the right to have a certified, CellarCool-approved, HVAC/R technician go on site and inspect the product if the initial trouble shooting warrants further investigation. CellarCool Corporation is located at 1738 East Alpine Avenue, Stockton, California 95205.

## **7. Request for Product Evaluation and Repair Under Warranty**

**SPLIT SYSTEM FIELD SERVICE WARRANTY POLICY:** This Policy is to clarify what falls under Warranty Service and what becomes the responsibility of the Owner. CellarCool ("manufacturer") strives to provide our customers with a superior Product and we back our Product with a Two Year Limited Warranty. Please review the CellarCool Product Terms and Conditions including Product Limited Warranty and Product Installation Requirements to ensure you have a complete understanding of our Policy and coverage of your Split System.

**ARBITRATION:** Any disputes arising out of or in connection with the installation and warranty of the Split System shall be referred to and finally resolved by a CellarCool approved Independent Certified HVAC/R Technician. The evaluation of the Technician on all issues or matters of identifying the responsible party (CellarCool or Installing Technician) shall be determined in a written report. This report will be made available to all concerned parties. If discovered under warranty, CellarCool will assume the financial responsibility under their warranty guidelines. If the report finds the Owner's Installer as the responsible party, CellarCool will provide all documentation to the customer to substantiate the findings. This will include the Invoice from the Independent Certified HVAC/R Technician and the written report of the findings. The Owner will become responsible for payment directly to CellarCool for all charges incurred for repairs (labor, parts and shipping costs) on the Split System.

## **8. Miscellaneous Terms and Conditions**

- A. **Return Policy.** All return inquiries must be made within thirty (30) calendar days of the original purchase of a Product and are subject to a twenty five percent (25%) restocking fee. Shipping costs are not refundable and the Purchaser is responsible for all return shipping costs (including customs fees and duties, if applicable).
- B. **Security Interest.** CellarCool retains a security interest in each Product until payment in full.
- C. **Construction and Severability.** Every provision of these Terms and Conditions shall be construed, to the extent possible, so as to be valid and enforceable. If any provision of these Terms and Conditions is held by a court of competent jurisdiction to be invalid, illegal or otherwise unenforceable, such provision will, to the extent so held, be deemed severed from the contract of sale between Purchaser and CellarCool, and all of the other non-severed provisions will remain in full force and effect.
- D. **Governing Law/Choice of Forum.** The laws of the State of California (without regard for conflicts of law) shall govern the construction and enforcement of the these Terms and Conditions of Sale (Sections 1 through 9 inclusive, including Product Limited Warranty And Product Installation Requirements), and further these Terms and Conditions of Sale shall be interpreted as through drafted jointly by CellarCool and Purchaser. Any dispute will be resolved by the courts in and for the County of San Joaquin, State of California, and all parties, CellarCool, Purchaser and End User, hereby irrevocably submit to the personal jurisdiction of such courts for that purpose. No waiver by CellarCool of any breach or default of the contract of sale (including these Terms and Conditions of Sale) concerning a Product will be deemed to be a waiver of any preceding or subsequent breach or default.
- E. **Correction of Errors and Inaccuracies.** These Terms and Conditions may contain typographical errors or other errors or inaccuracies. CellarCool reserves the right to correct any errors, inaccuracies or omissions, and to change or update these Terms and Conditions, at any time without prior notice.

## **9. Questions, Additional Information And Technical Assistance**

- A. **Questions.** If you have any questions regarding these Terms and Conditions or wish to obtain additional

information, contact us via phone at 1-800-343-9463 or please send a letter via U.S. Mail to:

Customer Service  
CellarCool Corporation  
1738 E Alpine Ave  
Stockton, CA 95205

Email: support@cellarcool.com  
Web: www.cellarcool.com

B. Technical Assistance. CellarCool Customer Service is available Monday through Friday from 6:30 a.m. to 4:00 p.m. PST. The Customer Service representative will be able to assist you with your questions and warranty information more effectively if you provide them with the following:

- 1. The model and serial number of your CellarCool UNIT.
- 2. The location of the system and installation details, such as ventilation, construction of your wine cellar, and room size.

Model **WM&FD** Serial Number **C**

Installed by \_\_\_\_\_ Date \_\_\_\_\_

# CELLARCOOL

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